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WATERLAT-GOBACIT NETWORK WORKING PAPERS

Research Project Series — SPIPRW

PRINWASS Project

Working Paper Vol. 3, N° 3

An examination of the politics of privatization of water and sanitation services in Africa, Europe, and Latin America (1990-2004)

Newcastle upon Tyne and Mexico City, June 2016

Cover pictures:

Left: *Zir*, drinking water container left by people outside their homes to offer free water to thirsty passers by. Ancient cultural habit still practiced in Middle Eastern and North African countries. Cairo, Egypt, 2004.

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Middle: A public monument representing the joy of free drinking water, Barcelona, Spain.

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Upper right: Anti-privatisation campaign: popular referendum on water privatization, Madrid, Spain, 2 April 2003. Source: Campaign website.

Lower right: Anti-privatisation campaign: popular referendum on water privatization, Italy, 2011. Source: Campaign website.

Back Cover picture: Members of the PRINWASS Research Team at the Final Project Meeting, University of Oxford, Oxford, UK, 30 June -1 July 2004.

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José Esteban Castro
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Newcastle upon Tyne, UK June 2016

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An examination of the politics of privatization of water and sanitation services in Africa, Europe, and Latin America (1990-2004)

Keywords

Privatization; water and sanitation services; neoliberal politics; Africa, Europe, Latin America

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Presentation of the SPIPRW Series and the Working Paper

We are glad to present the fourth Working Paper of the PRINWASS Project Series (SPIPRW). The SPIPRW Series has the objective of making available the final reports of the PRINWASS Project. This project was carried out between 2001 and 2004 and was funded by the European Union's Fifth Framework Programme. PRINWASS is a major landmark for our network, as WATERLAT-GOBACIT was created by a group of PRINWASS partners after the project ended to continue working together on the politics of water and water services.

Although some time has passed since the project ended, the topics addressed and the project's findings have significant relevance and can contribute towards better understanding some of the challenges currently facing the implementation of progressive, egalitarian water politics. In short, PRINWASS' main objective was to examine critically the policies of privatization of water and sanitation services implemented worldwide during the 1990s, looking at specific cases from Africa, Europe and Latin America. The project carried out case studies in Argentina, Bolivia, Brazil, England and Wales, Finland, Greece, Kenya, Mexico, and Tanzania, and developed comparative analyses of the main findings. Although the reports were freely available by request, and we produced a number of specific publications based on the project's findings, much of the material remains largely unknown and, for this reason, we launched the SPIPRW Series to facilitate their dissemination.

This Working Paper presents the Final Report that provides an overview of the PRINWASS Project and a summary of main findings. The original report was written in 2004, and therefore sometimes contains references that may be outdated. We decided to keep the original text, and only edited it to adapt the formatting and to make some corrections. We hope that the readers will find this material useful and that it can contribute to the work of our researchers, students, activists, and others in their activities to understand better the internal workings and the huge impacts of water privatization processes. These policies are not only very much alive, but are also experiencing a worldwide revival. Therefore, we believe that the findings and lessons that emerged from the PRINWASS Project deserve this publication effort. We wish you all a pleasant and fruitful reading.

José Esteban Castro

Newcastle upon Tyne, June 2016

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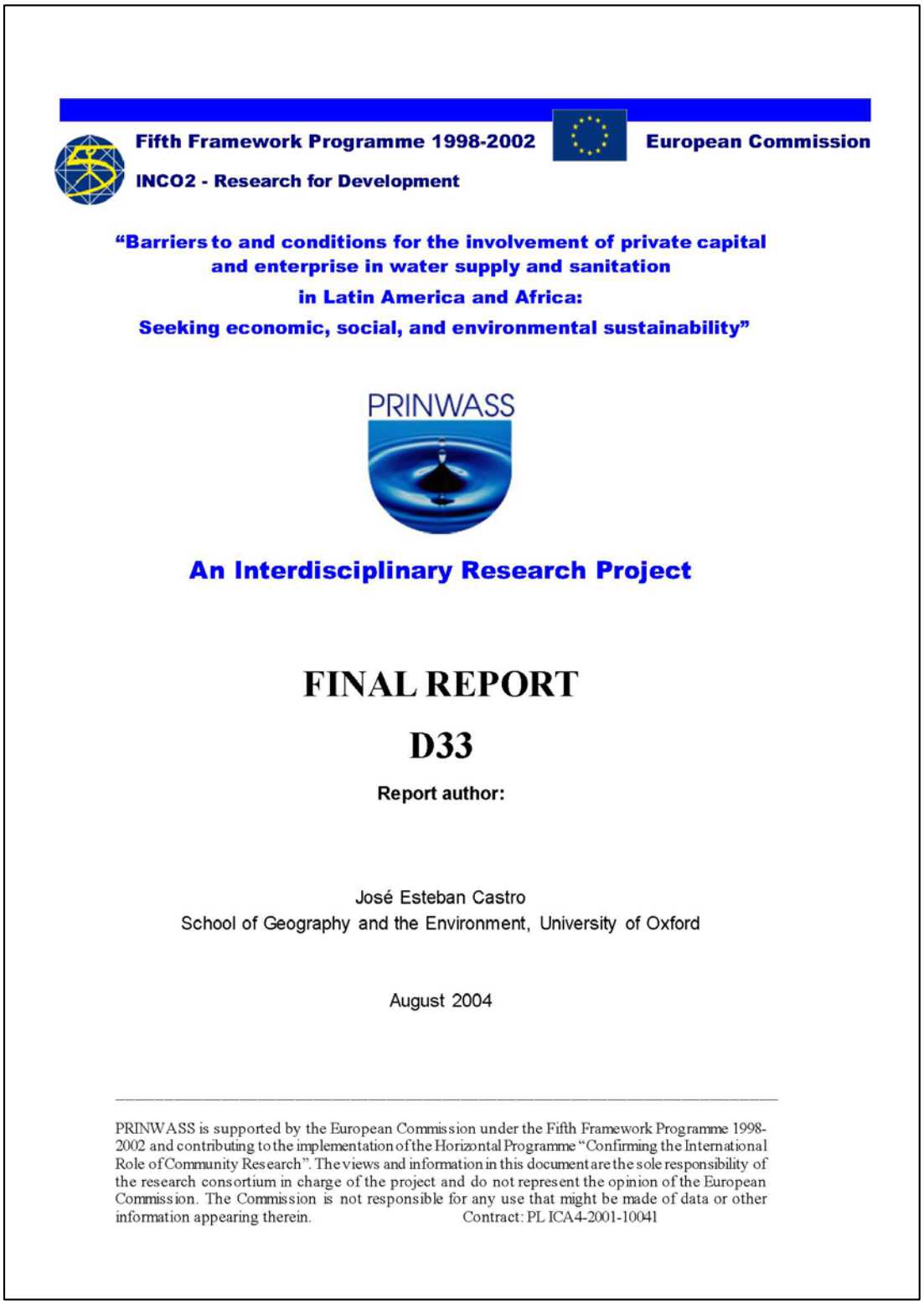

Fifth Framework Programme 1998-2002 European Commission

INCO2 - Research for Development

"Barriers to and conditions for the involvement of private capital and enterprise in water supply and sanitation in Latin America and Africa: Seeking economic, social, and environmental sustainability"

PRINWASS

An Interdisciplinary Research Project

FINAL REPORT

D33

Report author:

José Esteban Castro
School of Geography and the Environment, University of Oxford

August 2004

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Acronyms

AASA	Aguas Argentinas (Buenos Aires water utility, Argentina)
ASSEMAE	National Association of Municipal Water and Sanitation Services (Brazil)
BOT	Build-Operate-Transfer
BOO	Build-Operate-Own
CAASA	Aguascalientes Water Company S. A. (Mexico)
CAN	National Water Commission (Mexico)
COMPESA	Pernambuco's Water and Sanitation Company (Brazil)
D1-Dn	I refer to the different project reports ("deliverables" in the jargon of EC-funded research) as documents D1, D2, D3 …Dn. I list them in the bibliography under the name of the document's main author or co-ordinator, as it may correspond. When a reference is made in the text, I provide both the acronym and the author's reference: D2 (Seppälä, 2002). A full list of the project's deliverables can be consulted in the project's web site: http://www.prinwass.org.
DMAE	Municipal Department of Water and Sanitation (Porto Alegre, Brazil)
ECLAC	UN Economic Commission for Latin America and the Caribbean
EMASESA	Seville's Municipal Company for Water and Sanitation Services (Spain)
ENOHSA	National Entity for Water and Sanitation Works (Argentina)
EPAL	Portuguese Public Water Company
ESA	External Support Agency
ETOSS	Tripartite Entity of Sanitation Works and Services (Argentina)
EYDAP	Athens Water Supply and Sewerage Inc. (Greece)
GWI	Global Water Intelligence
GWP	Global Water Partnership
HDI	Human Development Index
ICSID	International Centre for Settlement of Investment Disputes
IDB	Inter American Development Bank
IFIs	International Financial Institutions
IMF	International Monetary Fund
INCO-DEV	International Cooperation for Development, European Commission
LDCs	Less Developed Countries
MDGs	Millennium Development Goals
NBI	Unmet Basic Needs (NBI for its Spanish acronym)
NYEWASCO	Nyeri Water and Sewerage Company (Kenya)
OECD	Organisation for Economic Cooperation and Development
OFWAT	Office of Water Services (United Kingdom)
OSN	Obras Sanitarias de la Nación (Argentina)
PMSS	Modernization Programme for Water and Sanitation Services (Brazil)
PRONAPAC	National Programme for Potable Water and Sewerage (Argentina)
PSP	Private Sector Participation
RWAs	Regional Water Authorities (England and Wales)
SABESP	Sao Paulo State's Water and Sanitation Company (Sao Paulo, Brazil)
SADM	Water and Sanitation Services of Monterrey (Nuevo León, Mexico)
SAMEEP	Water and Maintenance Provincial Company (Chaco, Argentina)

SEMAPA	Cochabamba Municipal Service of Potable Water (Bolivia)
PT	Workers' Party (Brazil)
UFW	Unaccounted for Water
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WSS	Water and Sanitation Services

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Barriers to and conditions for the involvement of private capital and enterprise in water supply and sanitation in Latin America and Africa: Seeking economic, social, and environmental sustainability. Final Project Report

José Esteban Castro, Project Co-ordinator[1]
Newcastle University, United Kingdom

Introduction[2]

This reports presents an overview of the original project goals, objectives, and research plan, and discusses the characteristics of the work done and the main findings. It is based on the whole range of reports produced during the project life, in particular the 10 full case study-reports,[3] 1 complementary case study report,[4] 6 cross-comparative reports covering the key analytical dimensions of the project,[5] and the 9 country strategic reports.[6] Section 1 reviews the research problem, questions and objectives that we set up in the original proposal. Section 2 briefly explains the structure of the research, its main analytical dimensions and phases, and the chosen methodological approach, including an overall description of the group of case studies. Section 3 presents the main findings according to the objectives proposed and looking at the economic-financial trends, infrastructure and environmental aspects, socio-economic and demo-geographic structures and processes, and socio-political factors. Section 4 provides a synthesis of the main conclusions. An Appendix offers some additional

[1] E-mail: esteban.castro@ncl.ac.uk.

[2] We have avoided unnecessary referencing throughout the report to make the text more readable, although for specific pieces of information or analysis we have provided the relevant references for easy consultation. Apart from these cases, all the information on which this report is based has been extracted from the PRINWASS case study reports, strategic country reports, and cross-comparative reports, which are listed by author in alphabetic order in the Reference List.

[3] Azpiazu et. al. (2003), Castro (2003), Crenzel (2003), Kallis and Coccossis (2003), Crespo et. al. (2003), Mashauri (2003), Nyangeri (2003), Seppälä et. al. (2003), Torregrosa et. al. (2003), and Vargas (2003).

[4] Roze (2003).

[5] Azpiazu and Schorr (2004), Castro (2004b), Crenzel and Forte (2004), Kallis and Coccossis (2004), Torregrosa et. al. (2004), and Vargas and Seppälä (2004).

[6] Azpiazu et. al. (2004), Castro (2004a), Laurie et. al. (2004), Kallis and Coccossis (2004b), Mashauri (2004), Nyangeri (2004), Seppälä (2004), Torregrosa and Kloster (2004), and Vargas (2004).

information, but for a full account of the arguments and evidence the reader should look at the relevant base reports (see Reference List).

In the strategic country reports we have incorporated a reference to the most likely trajectories that WSS may follow during the next decade, which aims at providing insights and reference points for policy design and implementation in the field. We have also included policy recommendations in these reports and also in the cross-comparative studies. We aim at developing abridged versions of the recommendations in the form of policy briefs and other dissemination instruments, which will be available through the project's web site: http://www.prinwass.org.

1. The research problem, questions, and objectives

Our research problem has been centred on the continued failure to provide essential water and sanitation services in less developed countries (LDCs). The figures are well known: 1.1 billion people worldwide have no access to safe drinking water, 2.4 billion people lack basic sanitation, and 5 million people die each year from preventable water-related infections, while millions are affected by long-term illnesses caused by the intake of health-threatening substances naturally present in water such as sulphates, arsenic, or manganese. Preventable diarrhoeal diseases alone kill about 2 million people every year, most of whom are children under 5 years of age living in peri-urban and rural areas of LDCs under conditions of extreme poverty. An estimated 6,000 children die each day from preventable water-related diseases.

In our perspective, as stated in the original project proposal,

> The reasons for the lack of access to water and sanitation services affecting a large share of the world population are not only technical, but also socio-economic, organisational, institutional, political and cultural. In the developing world, the problem is more often caused by policy and institutional failure, rather than by technical failure (PRINWASS, 2000: 3).

Within this overall framework we decided to focus on the main efforts being implemented by the international community in order to tackle the problem. In this regard, our research target has been the mainstream water and sanitation (WSS) policies implemented in the sector since the 1980s, which have promoted the expansion of private sector participation (PSP), especially that of multinational private water monopolies, as the key strategy to solve the situation in developing countries. According to information available at the time when we developed the research proposal, investment flows and the number of contracts involving PSP in the provision of WSS in developing countries had significantly increased since 1990 (Table 1).

Table 1. International Investments Flows in Developing and Transition Countries for Water and Sanitation (1984-1997)

Year	Number of contracts	Increase (%)	Value (€ million)	Increase (%)
All Developing Countries				
1984-90	8		300	
1990-97	97	1,137%	25,000	7,900%
Breakdown by region (1990-97)				
East Asia	30		12,000	
Eastern Europe/Central Asia	15		1,500	
Latin America/ Caribbean	40		8,300	
Middle East/North Africa	4		3,300	
Sub-Saharan Africa	8		37	

Source: Elaborated from DFID (2000).

This expansion of PSP reflected policy decisions in developed countries about how investment, aid, and loans to developing countries should be directed. It was based on the diagnosis made in the mainstream literature that the public sector had failed to deliver an efficiently managed universal provision of essential WSS –an empirical question–, and that the main reason for this failure is that the public sector is inherently inefficient to produce and distribute goods and services –a theoretical and ideological assumption. This assumption was complemented in the literature with the assertion that the private sector is inherently superior and more efficient than the public, on the basis of which a number of claims were derived that provided the main rationale for the policies being implemented in the WSS sector worldwide. Our main interest was precisely to explore and evaluate the validity of these claims regarding the expected impact of PSP in the water and sanitation sector of LDCs.

As identified in the original project proposal, mainstream WSS policies claim, among other issues, that expanding PSP is the best strategy for

- enhancing the efficiency of infrastructure services;
- extending their delivery to the poor;
- relieving pressure on public budgets by providing fresh private investment;
- improving social equity.[7]

[7] As stated, for instance, in World Bank (1998: 1); Savedoff and Spiller (1999); IDB (1998): 120.

However, there were already warning signs that the policies were not achieving their stated objectives. For instance, as Table 1 already suggests, there were high regional inequalities in the way in which these efforts were directed, with a high concentration of projects in Latin America and the Caribbean and East Asia, while other regions such as Sub-Saharan Africa were receiving little attention. In addition, there was also a strong concentration by country, reflecting that the unevenness of the process was also intra-regional, as shown in Table 2. These inequalities were also expressed in other forms, in particular in the concentration of PSP projects in water supply to the neglect of much needed investment in the wastewater collection, treatment and disposal (Silva et. al., (1998).

Table 2. Top Five Developing Countries by Total Investment in WSS (1990-97)

Country	**Value (€ million)**	**Number of projects**
Argentina	6,837	7
Philippines	6,435	3
Malaysia	5,362	6
Turkey	1,360	2
Mexico	660	12

Source: Elaborated from Silva *et. al.* (1998).

We assumed the hypothesis that these trends were indicating that the particular forms of private involvement been promoted by mainstream WSS policies may be contributing to worsening regional and local inequalities in the context of increasing market globalisation. This hypothesis received some support from the fact that those regions with the highest level of private investment in WSS like Latin America had also seen their inequality gap widened during the 1990s which, "regardless of the measurement used", made the subcontinent the most unequal region in the world (IDB (1998). The claim that PSP would fill the gap left by the state in extending services to the poor and reducing social inequity was not being matched by the emerging empirical evidence.

Also, it was evident that the expansion of PSP was not necessarily being reflected in increased infrastructure efficiency or in the relief of public sector debt through the increase of genuine fresh private investment. There were already well-known examples of private sector failure in the 1990s due to worsening efficiency

standards in WSS, not only in developing countries but also in the developed world.[8] Also, the level of indebtedness of some countries, Argentina perhaps the best example, had more than doubled during the 1990s, and the expansion of PSP seemed to be adding to the problem. For instance, in the case of Tucumán, Argentina, the collapse of a PSP concession in 1997 as a result of widespread public dissatisfaction with steep price increases and the worsening quality of the service resulted in a new financial threat for the already burdened public sector. The private consortium Aguas del Aconquija, led by the French water monopoly Vivendi, sued the Argentinean government for 300 million dollars in compensation for the cancellation of the contract (in concept of expenses and future earnings lost over the 30 years of the original concession). The fact that the tribunal where the case was presented was the International Centre for Settlement of Investment Disputes (ICSID), closely related to one of the major sponsors of PSP, the World Bank, was casting shadows over the transparency and justice with which the trial could be conducted.[9] A similar situation took place in the case of Cochabamba with the collapse in March 2000 of the concession of the local water utility to International Water, which sued the Bolivian government before the ICSID for 30 million dollars. This case was aggravated because Bolivia, leaving aside Haiti and Nicaragua, is the poorest country in Latin America. In Aguascalientes, Mexico, the private operator (led also by the French group Vivendi) had to be rescued from bankruptcy by the public sector after the 1994 financial crisis, which involved an undisclosed amount in concept of state subsidy and the significant reduction of the private operator's financial responsibilities for investment in infrastructure. By the late 1990s the claims about the supposed higher efficiency of private sector operators and the beneficial impact of PSP on public finances were increasingly contested in the light of the mounting evidence to the contrary.

Nevertheless, the debate has been marred by entrenched ideological positions and narrow interests which obscure the capacity of the actors involved for rational argumentation and practical action. Contributing to the rationalization of this debate is perhaps the most important general objective underlying our research effort. We are not neutral in this debate –and the team members held different opinions and positions regarding this debate–, but have made an effort to produce objective results, based on empirical evidence, while engaging with representatives of all sectors involved in order to ensure a maximum degree of exposure of our arguments to constructive criticism. In this connection, to start exploring the claims and counterclaims around PSP we elaborated a series of research questions, which had both an intellectual gist as well as a practical, policy-oriented preoccupation. We were interested in addressing the following issues:

[8] We referred at the time to the work of Lorrain et. al,.(1997); Morgan et. al. (1996); Haughton (1996).

[9] As such, to the best of our knowledge, the case continues to be unresolved at the time this report is being written [August 2004]. The company lost the case in the first audience, but it appealed the decision.

- What was the theoretical ground informing these claims and the design and implementation of mainstream WSS policies?
- What was the historical or empirical evidence used to support these claims and the particular policy options chosen?
- What can be learnt from the recent experiences of success and failure in the implementation of these policies in LDCs?
- What are the critical success conditions and crucial barriers for private participation in WSS in developing countries?
- How these factors may affect the future implementation and development of WSS systems with private sector involvement that are not only efficient but also socio-economic and environmentally sustainable and democratically accountable?

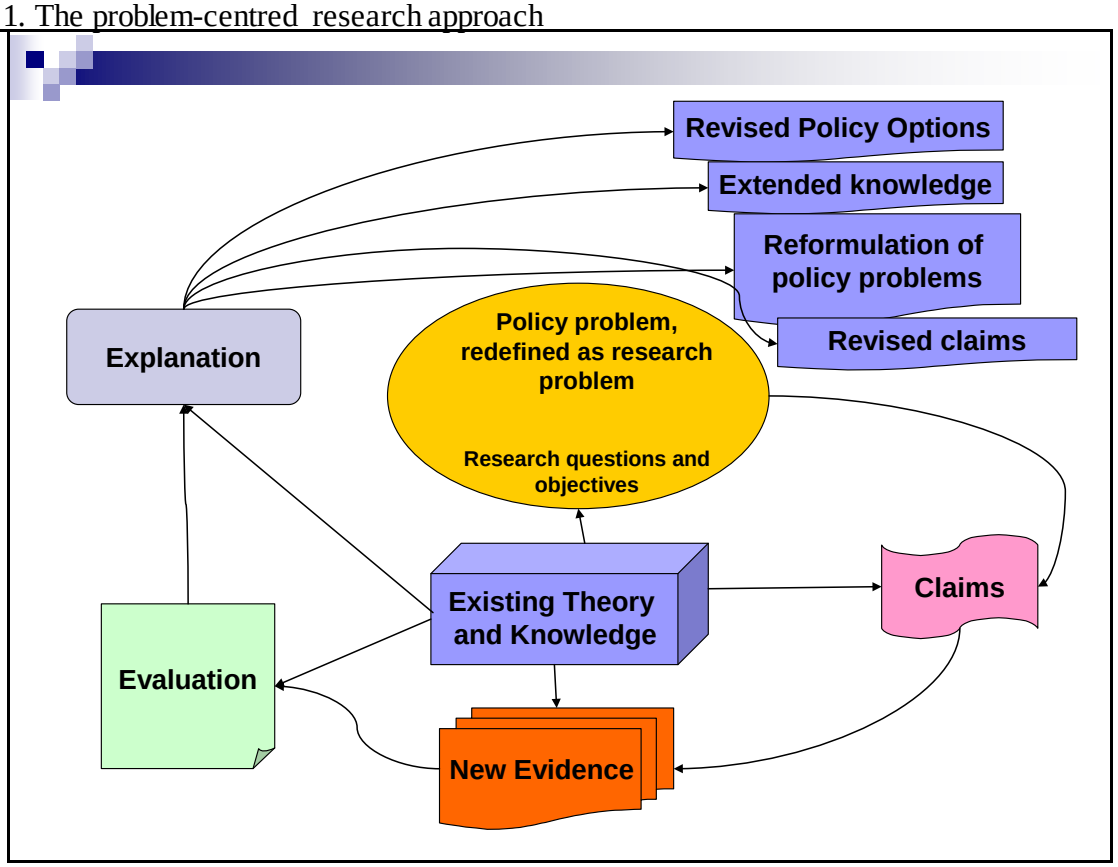
In order to address these initial exploratory questions we adopted a number of research objectives that would orientate the research effort:

- Assessing the theoretical foundations of the current policy prescription for improving WSS in developing countries, focusing on the policy-institutional, economic-financial and socio-political/cultural aspects;
- Analysing the continuities and emerging trends in structural approaches to improving sustainable WSS; drawing on a cross-comparative report for the countries studied;
- Identifying the barriers to and conditions for improving WSS in urban and peri-urban areas of developing countries (with particular reference to legal, administrative, policy, economic-financial, political, socio-cultural, etc. issues);
- Analysing, and assessing the significance of, the interactions between the requirements of global financial and other institutions and the structural contexts and the barriers to and conditions for improvement in WSS;
- Establishing and assessing recent and current experiences of private sector involvement in the WSS sector of the case-study countries and provide analytical reports for each country;
- Developing an indicative framework of strategy and processes, expressed by relevant guidelines, for sustainable WSS in developing countries, taking into account the roles of the state (national, regional, and local government levels), civil society (users associations, citizen movements, etc.), and market forces (privatised water utilities, public-private partnerships, and other forms of private sector involvement in WSS).

The sequence leading to the identification of the claims and the elaboration of the research questions and objectives is illustrated in Figure 1. The diagram also shows the forward links connecting with the actual research work consisting in the search for

evidence, evaluation, explanation, and contributions towards the enhancement of policy options and the expansion of knowledge.

Figure 1. The problem-centred research approach

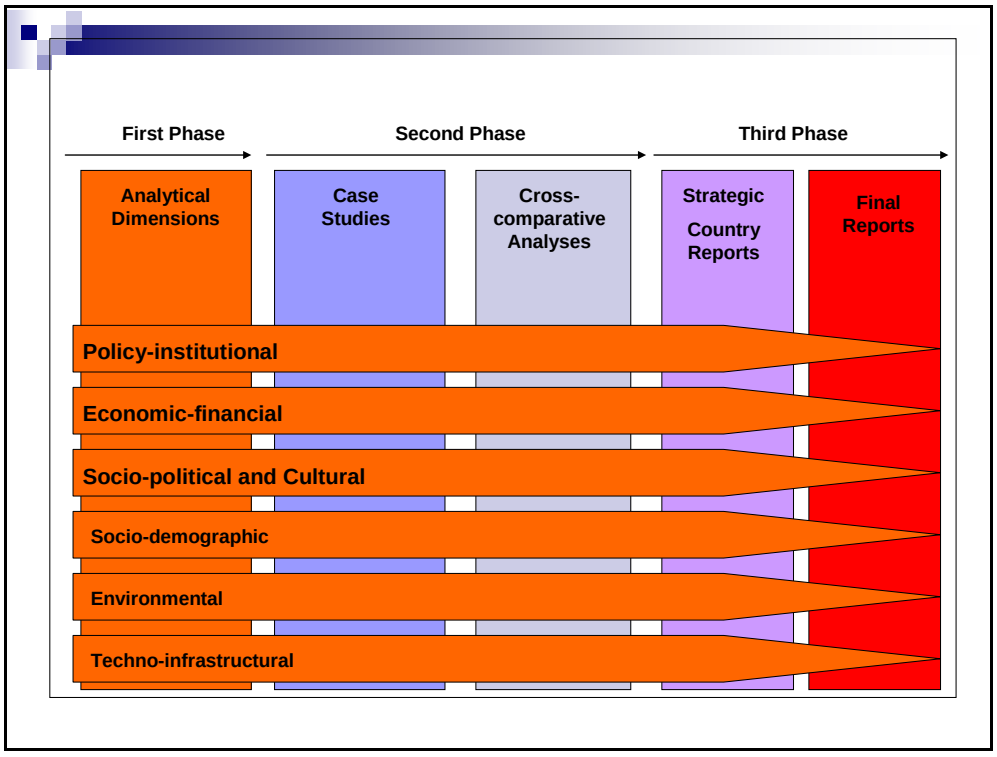


The original research questions and objectives were revised and confirmed at the Second Research Workshop that took place in Mexico City on 31 March and 1 April 2003. It was agreed then that the project's questions and objectives remained valid despite the significant developments that had taken place since the PRINWASS research proposal was conceived in 1999-2000, in particular the adoption of the Millennium Development Goals (MDGs) for 2015/2025, and the changing role and strategies of the private water multinationals since 2002. We come back to these issues later.

2. The research structure

The research work was structured around case studies and was divided into three phases, as illustrated in Figure 2. The first phase was aimed at elaborating the initial analytical framework to be applied in the case studies, in particular for the three central dimensions of the study: the policy-institutional, economic-financial, and socio-political and cultural. In this phase we also developed a provisional operationalization of these dimensions, through the identification of the main sub-dimensions and indicators for collecting information in the case studies.[10] The adoption of this common framework built around six dimensions[11] and their corresponding substructures was aimed at enhancing the conditions of comparability across the highly diverse case studies.

Figure 2. The project structure



[10] See Appendix A1 "Operationalization of the analytical dimensions".

[11] In the original proposal we had identified seven dimensions but later decided that the contents of the dimension "Water sector trends" were already subsumed under other dimensions, especially the "Environmental", "Policy-Institutional", and "Techno-infrastructural".

2.1. The case studies

The selection of cases was oriented at covering a wide range of experiences and conditions. From a certain perspective, an ideal strategy could be selecting cases that are highly homogeneous in some characteristics but with different patterns in the results observed regarding PSP. For instance, one could select all cases with participation of global water multinationals, with at lest a minimum period of experience (e.g. not considering cases with less than five years of PSP), and looking at cities of a certain size (e.g. not less than 100 thousand inhabitants), with results of success and failure in the implementation of PSP (measured against some concrete parameter, for instance, degree of compliance with the contractual obligations). However, an alternative strategy would be to select cases with contrasting characteristics in order to elicit a richer set of observables, which would allow exploring the impact of PSP in the water and sanitation sector on a wider range of situations.

Our selection of cases is closer to this second alternative, but was also influenced by the actual possibilities of the research partners in terms of expected access to information, personal contacts, capacity for carrying out the field work within a restricted budget,[12] and opportunity. The latter point is very important because our object is a mobile target: concessions are negotiated, granted, renegotiated, and cancelled some times in a matter of months. Therefore we adopted a flexible approach at the beginning of the project before finally deciding which cases would be selected. Another crucial factor was that selection of cases was also influenced by the existing relationships between the research partners, as we preferred to choose cases that were already familiar to the partners, not venturing into unknown situations for which we could be unprepared given the many constraints facing the team.

Nevertheless, in the original proposal we had identified most of the cases where the studies would be finally carried out. However, we allowed individual partners to re-examine the original selection of cases in the light of new developments and information, which led to a few changes in the original set of cases. In Argentina, for example, the peculiar conditions of the local partners allowed them to provide two full reports rather than one as originally planned, covering the cases of Buenos Aires (Aguas Argentinas) and Tucumán, the capital of the namesake province, separately. In addition, we had a complementary report covering some dimensions of the research for the case of Resistencia, capital of the North-eastern province of Chaco. In other cases, like Kenya and Tanzania, the local researchers were able to further specify the case studies originally targeted. In Kenya, the final decision was to look at the case of Nyeri municipality in the Central Province, the most advanced in terms of economic and human development, and Tala Town in the Eastern Province, one of the most disadvantaged. In Tanzania, the decision was to change the original location of Zanzibar for Dar es Salaam, where after several years of cumbersome negotiations a private concession was taking off in 2001-2 and was finally granted in 2003. In Brazil,

[12] The original budget asked was reduced by 25 percent once the project was approved for funding. Although we did not change our task plan, we needed to plan the field work with even greater economy than already envisaged in the project proposal.

the local partner decided to keep the cases of Limeira (Sao Paulo) and Niterói (Rio de Janeiro), but replaced the original locations of Santo André and Diadema (Sao Paulo) by the Lakes Region in Rio de Janeiro as the opportunity emerged to examine the original case of an inter-municipal body given in concession to a consortium headed by a European public company acting as a private operator. Finally, in Mexico the decision was to concentrate the study on the city of Aguascalientes, capital of the state of Aguascalientes, most particularly because this was the first full concession of WSS to a private operator in Mexico and was considered by the authorities to be a pilot case for the expansion of PSP in the country. Table 3 presents the final selection of cases.

Table 3. The selected case studies

REGION/ COUNTRY	CASE	POPULATION	WSS OPERATOR[13]	PERIOD OF OPERATION
AFRICA				
Kenya	Nyeri	120,540	NYEWASCO, corporate[14] municipally owned	1998 to date
	Tala	22,375	Romane Agencies Ltd., private	1999 to date
Tanzania	Dar es Salaam	2,497,940	City Water Services Ltd., private, (Biwater Plc / JBG Gauff Ingenieure)	2003 to date
EUROPE				
England	Thames River basin	12,493,000	RWE-Thames Water, private	1989 to date
Greece	Athens	3,187,734	EYDAP, mixed entity controlled by the state[15]	As a mixed entity since 1999 to date
Finland	Lahti	98,000	LV Lahti Water Ltd.	Over 30 years
	Lappavesi[16]	36,000	Lappavesi Ltd. and Lapua Sewerage Ltd., municipal	1972 to date
	Kangasala	23,000	Kangasala Municipality Water and Sewerage Ltd	1950s to date

[13] Name of the operator (acronyms explained in list at the beginning)), type (public, private or mixed), and leading partner (for multinational consortia).

[14] NYEWASCO is owned by Nyeri Municipal Council but is run by a Corporate Management Team on the basis of private sector operation and management models. It is part of a Pilot Project to reorganize Kenyan municipal WSS around commercial principles, in preparation to be eventually granted in concession to the private sector.

[15] The company floated 39 percent of its shares, which are owned by private investors.

[16] Includes the municipalities of Lapua (population 13,000), Nurmo (population 11,000), Kauhava (population 8,000), and Kuortane (population 4,000).

Table 3. Case studies (continued)

REGION/ COUNTRY	CASE	POPULATION	WSS OPERATOR	PERIOD OF OPERATION
LATIN AMERICA				
Argentina	Buenos Aires	11,453,725	AASA, private (Suez-Ondeo)	1993 to date
	Tucumán	697.936	ENOHSA, provincial operator[17]	1998 to date
	Resistencia (Chaco)	365,637	SAMEEP, provincial operator	1980 to date
Bolivia	Cochabamba	517,024	SEMAPA, municipal operator[18]	1967 to date
Brazil	Niterói (Rio de Janeiro)	459,451	Águas de Niterói, private	1999 to date
	Lakes Region[19] (Rio de Janeiro)	403,418	PROLAGOS, private (EPAL)	1998 to date
	Limeira (Sao Paulo)	249,046	Aguas de Limeira (Suez, Ondeo)	1995 to date
Mexico	Aguascalientes	643,419	CAASA, private (Vivendi - Veolia)	1993 to date

As it can be noticed, the variation between cases is high in several respects. Firstly, it is important to explain that although the project focused on PSP participation, we also considered some cases of public sector ownership and management. In some cases, like Finland, although all water utilities are in public hands, mainly municipalities, and cooperatives, the private sector has historically played a very active role but in a different capacity to the one promoted in mainstream WSS policies. Nevertheless, the private sector takes up to 80 percent of the revenue generated by the utilities, which illustrates the relevance of this model for the research. In other cases, like Athens, the public sector company has floated part of its shares (39 percent) which are now in private hands, providing another model of PSP worth exploring. In Nyeri, Kenya, the water utility is still public but being prepared to be eventually granted in concession to the private sector, which provides insights into the dynamic of the PSP

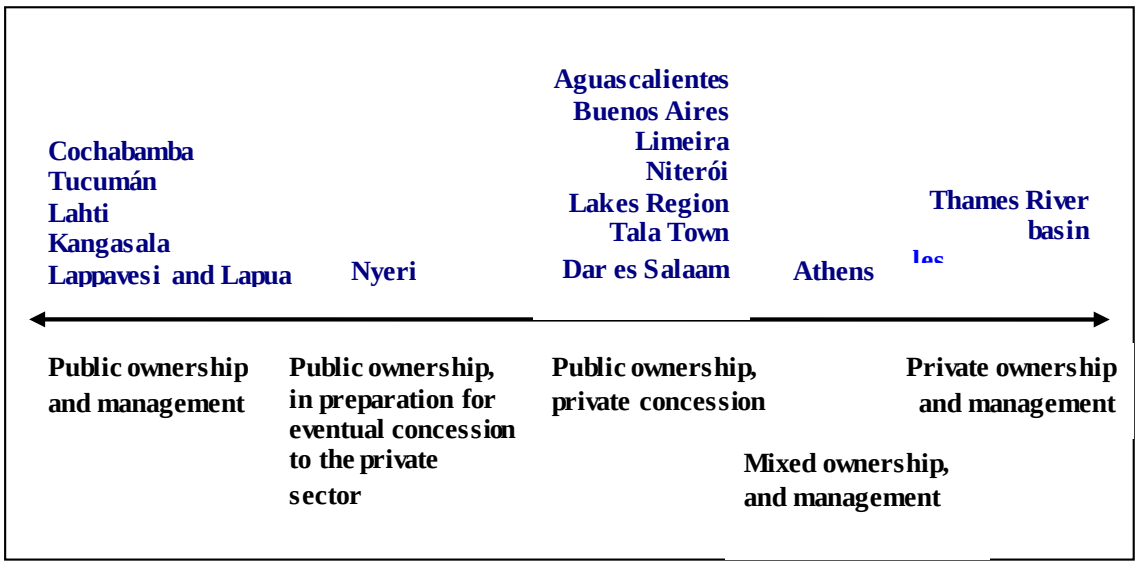
[17] This is one of two cases of failed PSP concession. In 1995 WSS were granted in concession to Aguas del Aconquija, a consortium led by the French group Vivendi, but the contract was cancelled in 1997 and the company was taken over by the public sector.

[18] This is the second failed PSP concession. The city's WSS were granted in concession to Aguas del Tunari, a consortium led by International Water (controlled by the American company Bechtel), in 1999, but the concession contract was cancelled in April 2000 and the company was taken over by the municipality.

[19] Includes the municipalities of Arauama, Saquarema, Silva Jardim, Armação dos Búzios, Arraial do Cabo, Cabo Frío, Iguaba Grande and S. Pedro da Aldeia.

process before it is openly launched. In Tucumán and Cochabamba we have public companies that had to take back the WSS after the collapse of the private concessions in both cases. Figure 3 provides a schematic description of this diversity of the cases with regard to ownership and management.

Figure 3. The diversity of ownership and management schemes in the cases



Secondly, the variation is also high when we consider the population size and the scale of the areas served by the different operators, ranging from small towns of between 4 thousand and slightly over 20 thousand people in Finland and Kenya to huge populations like in the Thames River basin totalling around 12.5 million people or Buenos Aires with just under 11.5 million people –around one third of the country's population. The water utilities examined are serving urban areas that range from 21 square kilometres in Nyeri to almost 3 thousand square kilometres in the Lakes Region of Rio de Janeiro, with population densities that go from 9.5 persons per square kilometre in Kuortane, Finland, to 13.7 thousand people per square kilometre in Buenos Aires (Federal Capital). These factors have an obviously crucial importance for the provision of WSS and need to be kept in mind during the presentation of the main results of the research to minimize distortion. Table 4 presents the cases according to population size, urban area, and population density. We consider some of these issues later on.

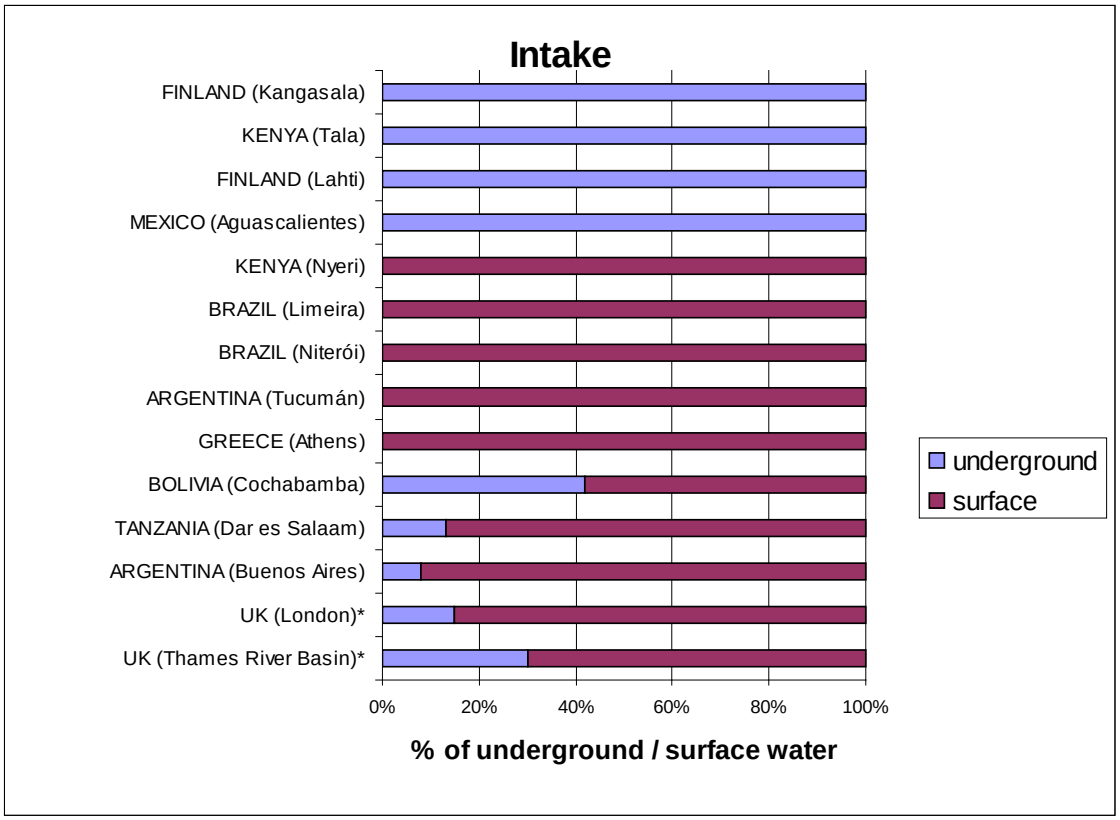
Table 4. Case studies by population size, urban area, and population density

CASE	POPULATION	URBAN AREA (square km)	POPULATION DENSITY (population/sq. km)
Thames River basin	12,493,000		
London	7,188,000	1,590.00	4,480.0
Buenos Aires	11,453,725	202.9	13,679.6
Athens	3,187.734	456.7	6,979.0
Dar es Salaam	2,497,940	1350.0	1850.0
Tucumán	697,936	90.0	5,862.3
Aguascalientes	643,419	86.3	68.9
Cochabamba	517,024	55.6	3,713.0
Niterói	459,451	134.5	3,507.0
Lakes Region	403, 418	2,957.9	136.4
Limeira	249,046	579.0	430.0
Nyeri	120,540	20.8	721.0
Lahti	98,000	134.98*	726.0
Kangasala	23,000	353.85*	65.0
Tala	22,375	33.7	721.0
Lapua	13,000	75.0	18.6
Nurmo	11,000	36.2	31.3
Kauhava	8,000	48.5	16.8
Kuortane	4,000	46.2	9.5

* Estimated

Thirdly, the hydrological and other physical-natural conditions affecting the provision of WSS are also highly variable across the cases, and these are crucial factors determining, for instance, different levels of investment for the energy inputs and conveyance structures needed for water abstraction, treatment, and distribution, which differ substantially between cities like Aguascalientes, London, or Buenos Aires. Likewise, pollution problems are very different in locations dependent on surface water than those relying more or completely on underground aquifers. Chart 1 shows just one of the aspects, the type of water sources on which the cases are dependent, to illustrate this variability.

Chart 1. Water sources used in the case studies



* In London the proportion of surface water used is higher than the basin's average.

Source: Torregrosa *et. al.* (2004).

Finally, there are other elements that also impinge on the comparability of the cases, some of which are addressed in the presentation of the main results, but there is one more important aspect that is worth highlighting here: the temporal scale of the PSP experience in the cases studied. In this regard, a tentative classification is to cluster the cases[20] into four groups: "mature" PSP cases, with over 10 years of experience, intermediate cases from 5-10 years of PSP experience, incipient cases below 5 years of PSP experience, and failed cases. Table 5 shows the cases grouped according to their PSP experience in a temporal scale.

[20] We did not include here the Finnish cases.

Table 5. Case studies by duration of the PSP experience

TEMPORAL SCALE OF PSP	CASE	START DATE	NUMBER OF YEARS
Mature	Thames River basin	1989	15
	Buenos Aires	1993	11
	Aguascalientes	1993	11
Intermediate	Limeira	1995	9
	Lakes Region	1998	6
	Nyeri	1998	6
	Athens	1999	5
	Tala	1999	5
	Niterói	1999	5
Incipient	Dar es Salaam	2003	1
Failed	Tucumán	1995-97	2
	Cochabamba	1999-2000	Less than 1

This information is crucial and must be kept in mind when reading the main results summarised in this report to avoid a misinterpretation of the conclusions. Many of the processes involved in the provision of WSS have to be considered in the context of their middle- to long-term lifecycles, such as the investment in maintenance, renewal and expansion (or decay) of WSS infrastructure, the environmental impact of rising volumes of raw water abstractions and unsafe disposal of untreated wastewater, or the influence of deindustrialization processes on the dynamics, levels, and quality of groundwater. This makes difficult sometimes to clearly allocate responsibilities to the different actors (e.g. public or private) with regard for instance to the evaluation of achievements or failures. In some cases, as shown later, promoters of PSP and private operators have praised themselves for achievements that had actually been the result of longer-term processes (certainly longer than their period in charge of the concession) made possible by others, whether be the public sector, for instance in the universalization of drinking water and sanitation in Limeira, the cleaning of the Thames River in England, or by a convergence of multiple factors underscoring the fall of infant mortality rates in Argentina which, understandably, also fell in areas that have been given in concession to a private operator.

Undoubtedly, even the most objective evaluation of such a sensitive topic as the expansion of PSP in the water and sanitation sector of developing countries is bound to be controversial for many reasons, but keeping these caveats in mind will contribute to make the conditions for detached analysis more feasible.

2. 2. Complexity and interdisciplinarity

The above considerations about the sheer scope of the case studies and the caveats that need to considered while looking at the results did not take us by surprise. The team was aware from the start that this was a very ambitious project and that we may face significant obstacles to develop all the planned tasks with the same level of detail and precision in all our cases and across all the different project phases. As stated in the original project proposal,

> We are well aware that understanding and explaining the complex situations characterising the problem addressed in this research require a degree of sophistication and comprehensiveness, which is impossible to achieve in a single project. If, in addition to that, the aim is to provide policy options and scenarios for facilitating effective action leading to the correction of the problem, the obstacles and impediments assume gigantic proportions. […] Another obstacle may be the availability, reliability and comparability of data, especially concerning the coverage and quality standards of WSS across the different countries (PRINWASS, 2000: 28).

In spite of these challenges, we assumed that the effort was worth doing because the project was aiming at breaking ground on important issues, in particular in the search for what we later called "meaningful interdisciplinarity" in water sector research.[21] The objective was to move beyond paying lip service to the need of more interdisciplinary work and venturing into the largely uncharted terrain where social scientists, engineers, physical geographers, and business experts, among others,[22] can work together on the assumption that disciplinary boundaries have been suspended at least for a short while. This is a risky business for everyone involved, especially if to the challenge posed by interdisciplinarity we add the interaction with practitioners, private businesses, NGOs, politicians, public servants, workers unions, users, and

[21] This was the topic of our First International Conference: "Meaningful Interdisciplinarity: Challenges and Opportunities for Water Research", which took place at the University of in Oxford on 24-25 April 2002 (http://www.prinwass.org/Conference_Apr02.shtml). The presentations for this conference are also available online: http://www.prinwass.org/docs_April02Conf.shtml.

[22] Our core team is composed by civil engineers (Tampere University of Technology, Finland; Dar es Salaam University, Tanzania; Nairobi University, Kenya), environmental planners (University of the Agean, Greece), geographers (Newcastle University, UK), economists (Latin American Faculty of Social Sciences, Argentina; Higher University of San Simon, Bolivia), social anthropologists (National University of the Northeast, Argentina), sociologists (Higher University of San Simon, Bolivia; Federal University of Sao Carlos, Brazil; Latin American Faculty of Social Sciences, Mexico; University of Lisbon, Portugal; National University of Buenos Aires and National University of General Sarmiento, Argentina; Oxford University), and urban planners (National University of General Sarmiento, Argentina).

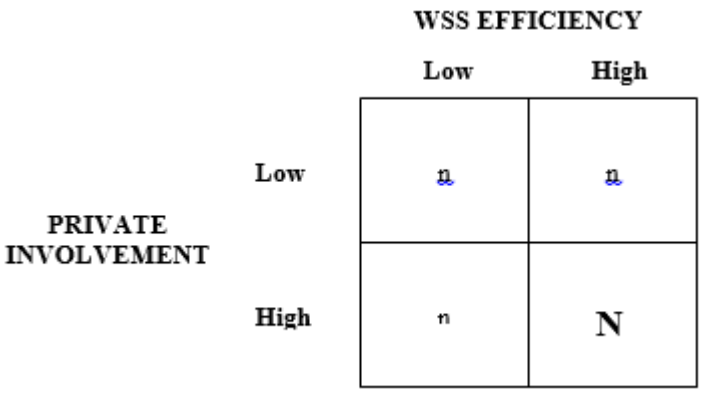
community organizations to just mention the main categories of actors that we engaged in the study.[23]

2. 3. Methodology

In the original proposal, we presented our approach as an exercise to examine the claims made in the mainstream WSS literature about the superiority of PSP over public sector ownership and management in a number of areas, in particular efficiency of infrastructure, provision of private investment, expansion of coverage to the poor, and enhancement of social equity, as already discussed earlier. For the sake of clarity we presented the exercise in the following terms:

> one of the predominant claims in the field is that private involvement, to put it shortly, improves the efficiency of WSS. If we take this claim as valid, then we would expect that in the context of an N number of cases the distribution should look like in Figure 2, that is, the largest number of cases represented by N should be concentrated in the bottom right cell, while the remaining categories should have a very low number of cases or no cases at all. That would be indicating that a "high" degree of private involvement is strongly correlated with an also "high" level of efficiency in the delivery of WSS.

Figure 2. Claimed relation between Private Involvement and Efficiency Level in WSS



> Similar diagrams could be developed for the other claims being investigated, such as that private involvement extends the delivery of WSS to the poor, relieves public budgets, or improves social equity

[23] In the course of the research work we established some permanent links with many of these actors, which we list in our web site as "Associated Institutions" (http://www.prinwass.org/associated_institutions.shtml).

> (developed in Section B 4). […] The expected result of our exercise should demonstrate not only that the correlation in Figure 2 has been much weaker than the predictions of the model have suggested, but also provide clues for understanding how and why this happens (PRINWASS, 2000: 18-9).

As it could be expected from the previous discussion, we did not pretend to be able to provide a rigorous quantitative assessment but this scheme provided a logical framework to organize the exploration, analysis, and evaluation of the particular claims. As already noted, to this purpose we operationalized the main analytical dimensions and identified the key subdimensions and indicators to gather the relevant information for analysis. However, a truly quantitative analysis could only be developed for some dimensions, such as the economic-financial or the socio-economic and demo-geographic, whereby we could expect to have access to data series amenable to quantitative methodologies. To a lesser extent, we could have expected to have quantitative data for the techno-infrastructural and the environmental dimensions. The other two crucial dimensions, the policy-institutional and the socio-political and cultural, were mainly focused on qualitative aspects, although obviously some quantitative treatment is always possible for some aspects (e.g. the impact of disconnection policies measured by the number of disconnected households, or civil disobedience fuelled by PSP expansion expressed in the proportion of unpaid water bills).

As it happened, crucial quantitative information was not readily available for a large number of cases, and for instance in the economic-financial dimension we could only complete some series in three cases: the Thames River basin, Buenos Aires, and Athens. In most other cases different obstacles made it impossible to access basic information for the whole concession period, such as the text of concession contracts, financial plans of the private operators, or disaggregated data for infrastructure improvements (e.g. to distinguish between improvements in physical and commercial losses).[24] Nevertheless, we had been aware of the potential difficulties in accessing sensitive information, a stated in the original proposal:

> Some authors have even argued that privatisation, coupled with the dismantling of the public sector, has prompted an institutional crisis due to the withdrawal of crucial information (e.g. on hydraulic management) that was previously in the public domain and has become the property of private corporations [Dourojeanni, 1999] (PRINWASS, 2000: 13).

This is in fact confirmed by our research, and the lack of information and transparency on crucial aspects of WSS management constitutes one of the most

[24] For instance, in the cases of Brazil and Mexico this kind of information is not in the public domain and access to it depends on the willingness of the private operators to provide it. For different reasons our researchers did not gain access to this vital material.

important obstacles to the democratic governance of water resources and WSS and, consequently, to the social and political sustainability of these processes. Despite these obstacles, we were able to gather solid information about most aspects covered in the research for at least a minimum number of examples, which allowed us to build the comparative analysis for each analytical dimension on the basis of a core group of case studies. These issues, and the particular methodologies employed, are explained in the individual cross-comparative studies on which this report is based.[25]

3. Main research findings

Our starting research questions were related to the theories and existing evidence informing the policies being examined. Although much of the debate has been centred on WSS reform, it is worth highlighting that expanding PSP in the control and even ownership of water resources has also become a major policy target, even when the two aspects are not always clearly related in the PSP projects for water and sanitation. In fact, according to some experts, in water sector reforms "the most significant act of privatisation may be the granting of property rights over water" (Lee, 1999: 93). As discussed later, this aspect has far-reaching implications, both at the theoretical and practical level, given that the actual process involves a radical change in the status of water resources from "public" to "private" good. In this regard, we decided to explore what were the theoretical ground and the historical or empirical evidence to support these claims about the superiority of PSP for improving water and sanitation services. To this purpose we focused our first research objective on "assessing the theoretical foundations of the current policy prescription for improving WSS in developing countries, focusing on the policy-institutional, economic-financial and socio-political/cultural aspects" (PRINWASS, 2000: 3).

In this connection, the specialized literature suggests an increasing consensus about the fact that the PSP policies implemented in the WSS sector since the 1980s have not been based on a coherent theoretical structure. Although they have often been presented as the logical result of the application of rigorous economic theory, they have actually been derived from different bodies of thought ranging from free-market liberalism to management theory, including neo-classical price theory, public choice, and property rights theory. Thus, although the central argument behind the process of de- and re-regulation, liberalization and PSP expansion that has dominated the global agenda since the 1980s derives from the neo-classical economics paradigm of competitive markets (Roemer and Radelet, 1991), the fact that economic theory "fails to provide any conclusive reason for favouring private over public enterprise" (Commander and Killick, 1988: 320) has led pro-PSP thinkers to introduce arguments derived from the public choice and property rights schools in order to assert the

[25] Azpiazu and Schorr (2004), Crenzel and Forte (2004), Torregrosa et. al. (2004), Kallis and Coccossis (2004), Vargas and Seppälä (2003), and Castro (2004b).

superiority of the private sector over the public (Nellis and Kikeri, 1989: 663). Moreover, these authors have also argued that expanding PSP would help not just tackling inefficiency and public-sector failure but also expanding "economic development and democracy in developing countries" (Dinavo, 1995: 2). However, the evidence shows that these claims are based on an ideological set of principles, derived from the Anglo-Saxon tradition of free-market capitalism, but not on a sound theoretical framework that is internally coherent and that has been empirically tested.

This connects with our second question aimed at placing the debate about PSP in historical perspective. In the mainstream literature reference to the switch from private to public provision of infrastructure and services that took place since the late nineteenth and early twentieth centuries is seldom explored —let alone explained. Moreover, there is no mention to the fact that activities like wastewater conveyance and disposal became the exclusive responsibility of public authorities, as the private companies were not attracted to invest in dirty water. For example, in the World Development Report 2004 there is a text box to account for "private participation in history" referring to WSS, whereby unregulated PSP in nineteenth century London is uncritically and over optimistically portrayed as a success story that would have led to the universalization of the services. Apart from the historical mistakes incurred in the brief note, nothing is said about the reasons why the services had to be placed under public control in 1902, after decades of political confrontation, or about the fact that when the decision was finally taken there was widespread consensus, including from defenders of free-market liberalism, that WSS have to be in public hands. Moreover, and also uncritically, the note adds that in the 1980s WSS were again privatized in England and Wales, without any reference to what has happened since, conveying the message that somehow things have returned to normality.[26] This distortion of the historical evidence is not uncommon in the pro PSP literature. For instance, in a co-authored article published by the pro-privatization think tank CATO, the World Bank Private Sector Specialist Penelope Brook Cowen has also praised the nineteenth-century unregulated private water monopolies in England without any critical reference to the actual historical record. Moreover, she has argued in favour of the benefits of "unregulated privatization", "unregulated private monopolies", and "laissez faire" where "the provision of services is regulated by market forces and economic incentives" to solve the situation of water services in developing countries today. The argument follows

> Complete privatization of water assets and unregulated natural monopoly. […] The rationale for unregulated privatization is straightforward. An unregulated private monopoly would have an incentive to bring as many potential buyers into the system as possible, so as to maximize profit. Unregulated private monopolies could thus significantly increase the number of water connections in developing countries. If unregulated privatization could produce hook-ups for

[26] World Bank, 2003: 167. The note also makes similar claims about the history of WSS in other countries, including the US.

> currently neglected low-income customers, the poor would end up with higher real incomes, better water service, more time for other endeavours, and a greater probability of a long life (Brook Cowen and Cowen, 1998: 22-3, 28).

Leaving aside for the moment the feasibility and desirability of establishing unregulated private water monopolies in developing countries, let us say that the opposition to these policies in nineteenth-century England and elsewhere is often described by these authors as a kind of public-sector conspiracy or as an anti-market, anti-liberal or even anti-democratic development. However, the second part of the nineteenth century in London was characterized by ongoing political debates, which led first to the attempt to regulate the operation of private operators in order to ensure minimum standards of quality and affordability and expansion of the services to the rapidly growing population. The failure of early regulation to improve the situation led to the municipalization of public services (Taylor, 1999; Hassan, 1998; Laski *et. al.*, 1935; Millward, 1991) and eventually to the amalgamation of the unregulated private water monopolies under the control of a joint board of local authorities in 1902 (Metropolitan Water Board, 1949). In fact, by the late nineteenth century it was accepted —across the political spectrum— that the achievement of social equity (in relation to the access to and affordability of safe water services) could not be left to the unregulated working of the market forces, and rather the provision of safe water services became widely conceived as a societal moral duty. The cholera outbreaks of mid-nineteenth century triggered the assumption that ensuring access to clean water and safe disposal of excreta for every household —at least in urban areas— was a binding moral duty for the community, and the Public Health Acts established that dwellings lacking safe water supply were unfit for human habitation (Luckin, 1986; Ward, 1997; Mukhopadhyay, 1975; Goubert, 1986.

In the Americas, the process had many similarities. In the United States, by the mid nineteenth century private water companies found it difficult to survive as profit-making and self-sufficient operations been technically and economically inefficient, characterized by their expensive tariffs and inadequate service standards (Schultz and McShane, 1978; Ogle, 1999). These problems, together with the risk aversion shown by private undertakers who were unwilling to invest in the expansion and improvement of the systems, led to the takeover of most private water companies by municipal authorities. Thus, while in 1806 about 94 per cent of water works were private by 1896 53 per cent had already been taken over or directly built by the public sector, a trend that was especially significant in the largest urban centres. Regarding sewerage systems, like in Britain these were almost exclusively a public sector endeavour and their development did not start until the second half of the nineteenth century (Keating, quoted in Hukka and Katko, 2002). Today, despite the expansion of PSP projects, most water systems in the US are still in the hands of public authorities (municipalities, counties, districts) or run on a not-for-profit basis, subject to strict regulation, and likely to remain so for the foreseeable future (National Research Council, 2002: 8, 38).

In Latin America, after independence from Spain and especially since the 1840s, the development of water supply systems became very much influenced by the models emanating from Europe and the United States, with varying degrees and forms of public

(mainly municipal) and private participation. The main forms of private involvement, which became widespread since the 1880s in most countries of the region, were the concession of the services or the granting of building contracts to foreign private companies for developing the systems under state control and with public funding. Overall, by the early twentieth century privately-provided water supply in Latin America resembled the pattern already observed in Europe and the United States, where the services only reached selected neighbourhoods in the most important cities and private undertakers were reluctant or unable to meet the financial and technical challenges posed by rapid urban growth and rising quality standards. One important exception to this pattern was Argentina, where water and sanitation services became a key element of public policy since the 1880s. After a short-lived attempt to privatize the services in Buenos Aires, the state-owned company took control and succeeded in extending the networks to provide full coverage in the capital by the 1930s. Overall, the national states assumed a leading role in the expansion of water and sanitation since the early twentieth century, a trend that was further accentuated by the economic crisis of the 1930s. Most private water companies were taken over by the public sector in order to expand the services. Also, alternative forms of private initiative (as opposed to public, whether municipal or state) such as co-operatives, mutual associations, and not-for-profit ventures also became important drivers for the development of public services, water included.[27]

Therefore, the experience of PSP in the water and sanitation sector needs to be analysed in the light of what some authors have called the "historical cycle of privatization and nationalization" (Klein and Roger, 1994: 1), characterized by the interweaving between the expansion of public sector participation and the role of the private sector over time. In this regard, there is recognition that the revival of market-driven politics (Leys, 2001), and especially the expansion of PSP, since the 1970s has not been as much the result of evidence-backed arguments as it has been the outcome of an ideological change that replaced the state by the market as the key driver of economic development (Lee, 1998: 51), a process that has been associated with "a clear rightward shift in political opinion in Europe and North America" (Commander and Killick, 1988: 316). In fact, there is an increasing though somewhat cautious recognition even among the key institutions promoting PSP that the empirical evidence to back the claims is at best ambiguous. For instance, in ongoing reviews of PSP experiences, World Bank specialists have concluded that "privatization is a difficult and contentious business. Privatization programmes have taken far longer to prepare and implement than originally envisaged. The concept's utility is contested by many" (Nellis and Kikeri, 1989: 670). Moreover, privatization has become increasingly associated with negative social and political processes and this may help to explain why even key global players of the private sector prefer to avoid the term altogether. As put

[27] See, for instance: for Argentina: Silvestri (1996), Herz (1979), Bordi de Ragucci (1985); Catenazzi and Kullock, 1997, and Pirez (1994); for Mexico: Pani (1916), Suárez Cortez (1998), Connolly (1997), Márquez M., (1994), Aboites Aguilar (1998), Birrichaga Gardida (1997); Bennett (1997); Pérez-Rincón (2002) for Colombia; Swyngedouw (1999), for Ecuador; Rezende and Heller (2002), for Brazil.

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by Mr Gérard Mestrallet, President-Director of Suez, one of the two largest global water corporations,

> we believe that the privatization of water infrastructures in developing countries is not necessary. […] The use of the term privatization made by some authors in their models while referring to situations where the public sector remains the final owner of the infrastructure constitutes an abuse of the language" (Mestrallet, 2001; our translation).

Nevertheless, the model was adopted in many developing countries during the 1990s, when there was a rapid expansion of PSP in the water and sanitation sector. This widespread adoption of mainstream WSS policies has been explained as being the result of a complex set of factors, including external pressures, policy emulation, the expansion of neo-conservative ideologies, political pragmatism in a time of deep economic crisis, or even political strategies directed at changing the power balance between national socioeconomic actors (Manzetti, 1999). From a certain perspective, expanding the market-driven model of WSS at a global scale became a question of militancy, as stated by one sympathetic commentator:

> It is a fact that privatization of state-owned enterprises in Sub-Saharan Africa, Asia, and Latin America will not succeed unless the Western industrialized developed countries, international financial institutions, such as the World Bank and the International Monetary Fund (IMF), and other aid donors continue to put pressure on these governments to privatize the public sector […]. Once the spirit of free enterprise reigns in these developing countries through privatization, the free market economy and democracy will emerge (Dinavo, 1995: 133).

In this regard, the "active advocacy" of the OECD governments seems to have been a major driver of these policies, whether through the direct action of government departments, aid agencies, lending policies, or through the programmes designed and implemented by bilateral and multilateral institutions (Commander and Killick, 1988: 314). The combination of "pressure" and "persuasion" implemented by these agencies was ingenuously described by a pro-privatization author referring to the situation in Africa, who suggested that

> the prospects for economic development and democracy in Africa are much greater through privatization than through state-owned enterprises. Pressure has been "applied on developing countries by international organizations such as the World Bank, International Monetary Fund (IMF), and the U.S. Agency for International Development to pursue the policy of privatization as a part of a package of economic reforms [quoting]". *In order for the leaders of the developing countries to see privatization as their best alternative, they have to be trained and educated in this field through seminars conducted by scholars and*

> *practitioners who have know-how in this field* [our Italics] (Dinavo, 1995: 51).

Ostensibly, this agenda has met with great opposition from different quarters, a reaction that has often been explained as the result of ideological prejudice if not blunt ignorance on the part of developing countries. As put by a USAID representative commenting on the leading role that the agency was taking in promoting privatization into the 21st century

> The U.S. Agency for International Development is defining future directions for privatization assistance based on the experience of the last 15 years —from a modest start in Latin America to the recent crescendo dominated by assistance to formerly Communist states. In the countries of Central and Eastern Europe and the former Soviet Union, the privatization of state-run enterprises and the dismantling of state monopolies are critical to these nations' transition to free markets. […] *Poorer countries and governments ideologically resistant to opening their markets —largely in sub-Saharan Africa, the Middle East, and South Asia— will need continuing technical and policy support, as well as new, creative interventions* [our Italics] (Farley, 1997: 10).

No doubt, a large share of the extensive range of papers, articles, and books published on this topic in recent years has been the result of this educational crusade. To give just an example, let us consider briefly the following justification for introducing PSP in the water sector by Terence Lee and Andrei Jouravlev from the UN Economic Commission for Latin America and the Caribbean (ECLAC). They asserted that "a number of different arguments suggest that, in the water sector, the regulation of privately owned and managed monopolies would increase economic efficiency", and suggested a series of advantages that would result from privatization, including

- "reduced political interference", which is blamed for the "poor performance of the public enterprises in the water sector" owing to the "politicization of key decisions regarding tariffs and personnel administration, and lack of managerial autonomy";
- "changing property rights", as according to "property rights theory […] public ownership attenuates property rights, reducing incentives to minimize costs and […] privatization will restore them;
- avoiding "regulatory capture", as "it is very difficult to solve the principal-agent problem that exists between the state as an owner and the managers of the state-owned enterprises without privatization (concentration of ownership). […] The diffuse nature of public property makes the principal-agent problem more difficult to solve in state-owned enterprises. Private sector managers, in contrast, are better able to pursue efficiency because their objectives are more clearly articulated";
- "more effective financial management" as "private companies have to raise resources in the capital market. This means that they are subject to

> the discipline imposed by the private capital market and the market for corporate control. Public utilities, in contrast, obtain their financing through the state. […] In addition, private sector managers have a direct personal stake in the profitability of their enterprises, something that is lacking in the public sector, where commercial objectives are subordinated to political goals and the threat of bankruptcy is absent. Public sector managers lack financial rewards resulting from increases in portfolio values. Consequently, their planning horizon would be short, i.e. until the next election, and the enterprises they manage would be characterized by a shorter time frame of reference foregoing investments yielding longer-term returns in favour of short-term investments yielding immediate and visible benefits. The short planning horizon also makes them more vulnerable to short-sighted political pressures (Lee and Jouravlev, 1997).

Many other examples of these highly influential arguments supporting the expansion of PSP in the water sector can be easily documented. And yet, when we observe the actual implementation of these policies in the field, public utility policies are embedded in specific socio-political and cultural environments, as well as peculiar historical circumstances, not being easily transferable from one national/regional context to another. Therefore, it is not surprising that the actual success in transplanting or adapting these models has been highly variable. For instance, there are very influential reference models of pro-market policies for WSS services being promoted by multilateral and external support agencies, mostly based on the French and the Anglo-American experiences (involving, respectively, concession and lease operations exclusively regulated by contracts and elected authorities on one hand, and specialized and powerful autonomous agencies and commissions in charge of regulating services fully privatized or delegated to private operators on the other). Such reference models seem to be more influential in highly urbanized Latin-American countries, such as Argentina and Brazil, than they are in Africa. Despite the influence that External Support Agencies (ESAs) and donors have in policy formulation and reform in the African continent, geo-economic and socio-cultural conditions are radically different and specific to fit in any pure or adapted model developed abroad.

Also, after recognizing the influence of multilateral agencies such as the World Bank in promoting PSP in the WSS sector, it is important to emphasise that in all the developing country cases studied these policies were in some way adapted or adopted by the national governments and other relevant local actors. One example is Argentina, where the neoliberal model of privatisation through large concessions granted to transnational companies promoted by the World Bank was adopted by the federal government in a far reaching reform programme that often went well beyond what was deemed acceptable for the IFIs themselves.[28] Contrariwise, although in Brazil most

[28] For instance, the little or almost non existent level of regulation characterizing most concessions granted during the early 1990s, including the case of Aguas Argentinas in Buenos Aires.

privatisation policies developed under the Cardoso administration were also primarily guided by macro-economic aims related to fiscal adjustment and monetary stabilisation, the strong mobilisation of the country's important WSS stakeholders in a context of higher institutional complexity than in the Argentinean case, impeded the full adoption of a national neoliberal policy in this field. As a result, and after long-standing and unresolved institutional changes PSP has been mostly limited to municipal concessions and BOT contracts with an important participation of national companies. Likewise, the overall institutional reform of Kenya's water sector is being developed since the late 1990s with the support of international cooperation agencies. However, it is clear that such reforms are not imitating any exogenous policy model, but rather seeking to build an institutional framework which takes into account the specific socio-economic, cultural and geographic conditions already involved in the supply of drinking water and sanitation services in the country. These examples show that the model has not been mechanically applied but has been adapted and adopted in different ways (Vargas and Seppälä, 2004).

Nevertheless, in addition to the controversial theoretical validity of the claims made about PSP, in perspective it is now clear that the mainstream model has failed to deliver the expected results. World Bank analysts have recognized that the impact of private sector participation in infrastructure provision on sustainable economic growth has been "unclear" (Alexander and Estache, 2000: 1), and that it has had "mixed" results in the supply of urban water services (Richard and Triche, 1994: 4). More recently, the World Bank has admitted that it would be wrong

> to conclude that government should give up and leave everything to the private sector. […] If individuals are left to their own devices, they will not provide levels of education and health that they collectively desire. […] Not only is this true in theory, but in practice no country has achieved significant improvements in child mortality and primary education without government involvement. Furthermore, as mentioned earlier, private sector or NGO participation in health, education, and infrastructure is not without problems –especially in reaching poor people. The extreme position is clearly not desirable (World Bank, 2003: 10-11).

However, despite this increasing recognition of the lack of theoretical consistency and historical-empirical backing for the expansion of PSP, the fact is that mainstream WSS policies have been –and are still– informed by the principles derived from this approach. The change, however, is coming from the main actors on which these policies have relied, as the private water multinationals are retreating from developing countries and are openly relinquishing any central role in the achievement of the MDGs, especially in the poorest regions. We come back to this later.

3. 1. Mainstream WSS in practice

The remaining research objectives aimed at "analysing the continuities and emerging trends" reflected in the implementation of the mainstream WSS policies in the case studies, "identifying the barriers to and conditions for improving WSS in urban and peri-urban areas of developing countries", and "developing an indicative framework for sustainable WSS in developing countries, taking into account the roles of the state, civil society, and market forces". Our main focus here was to unearth the elements of success and failure in PSP experiences by contrasting them against the claims in favour of PSP, while at the same time highlighting the constraints and opportunities facing the implementation of WSS in developing countries independently of the degree of PSP. In this regard, it is worth highlighting that the main goal of the research was not merely finding individual examples of PSP "success" or "failure", which it inevitable has also done, but to identify the main trends and processes at stake, the barriers and drivers of success and failure. We summarize here the main conclusions derived from the case studies and the cross-comparative reports.

3. 1. 1. Economic-financial trends

The analysis of the economic-financial aspects of the study were centred on issues of financial sources of the water utilities, criteria used in setting tariff rates, cost structure, revenue margins, the range and orientation of investments, and the key economic and social impacts of PSP in the local societies.[29] In general, the information for this dimension was incomplete given the difficulties facing the partners to access data in most cases, for instance on the business plans and financial sources of the private companies. Nevertheless, we managed to build an overall picture of the situation and in some particular cases like Buenos Aires and, to a lesser extent, the Thames River basin, a more complete analysis was possible thanks to better conditions for accessing vital information.

[29] For the full report on all aspects of this comparative analysis see Azpiazu and Schorr (2004).

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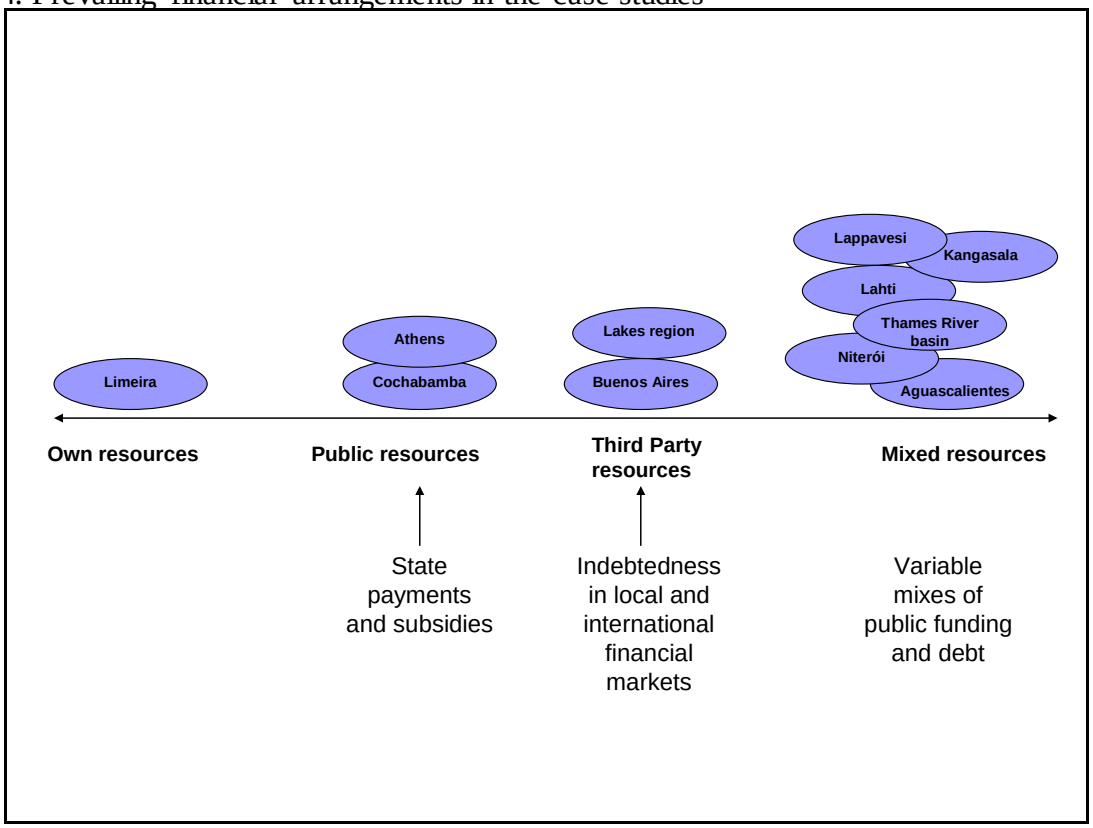
We present here a synthesis of the main issues:

- revenues from WSS fees –with some variations from case to case– are the most important source of funding for WSS operators, whether public, private or mixed;
- direct state subsidies and borrowing are the next most important sources of funding; these sources are increasingly becoming a structural component in WSS funding;
- "fresh resources" (own capital) have a significantly lesser role;
- the financial management in the cases tends to be characterized by
    - lack of transparency (e.g. about how these resources are allocated)
    - and scattered/incomplete information (e.g. about the actual level of borrowing of the operators);
- as a general trend capital formation has been far below than expected, with a pattern of
    - recurrent non compliance of investment commitments according to contract;
    - renegotiation of contracts to reduce the original investment commitments or outright transfer of the commitments back to the public sector;
- although in most cases the tariff structures have in-built elements of social equity, this is counterbalanced by the steep increases characterizing PSP concessions and the fact that these increases have had a negative impact on income distribution, affecting especially the poor.

Figure 4 represents the prevailing financial arrangements adopted by the WSS utilities studied. Leaving aside income from revenues, there is a trend towards variable mixes of public sector subsidies and debt as the preferred financial mechanism, while some companies have based the financial strategy either entirely on debt (AASA in Buenos Aires and Prolagos in the Lakes Region, both private utilities) or exclusively on public resources (Athens, a mixed utility, and Cochabamba's municipal company). Only one company reported exclusive own resources, Aguas de Limeira.[30]

[30] However, in this case the information has to be read with caution because the company reports that 65 percent of its resources proceeds from revenues and did not disclose the origin of the remaining 35 per cent.

Figure 4. Prevailing financial arrangements in the case studies



Tables 6-8 provide a more detailed breakdown of the financial arrangements of some companies for which we obtained more accurate data. Table 6 presents the case of Aguas Argentinas in Buenos Aires, where the composition of the financial structure relies heavily and increasingly on debt, which accounts for over 15 percent of total funding.[31] This has been a pilot case, praised by PSP promoters like the World Bank as a success story and a model to follow.[32] However when checking this particular piece of information against the claims made originally to expand PSP, for instance that it would bring fresh private investment, it can be noticed that contributions of fresh capital from the private operator have been a negligible component of the company's sources of funding, composing just 2.6 percent of the total. This is a consistent pattern across the different cases, although with variations. We come back to this later.

[31] During the 1990s AASA relied almost exclusively on international financing and acquired debts equivalent to one third of its profits (calculated over assets) without taking into account the risk of devaluation. When the peso convertibility (1 peso = 1 US$) was cancelled in 2002 the company had debts for US$ 650 million, half of which had to be repaid between 2002 and 2003, but after the devaluation income from revenues was reduced to US$ 170 million, which led the company to default on its debt in 2002 (for a more detailed account see Azpiazu and Schorr, 2004).

[32] See, for instance, World Bank, 2003: 168, Box 9.5.

Table 6. Sources of funding – AASA (May 1993-December 2001) (in € and %)

Source	€ (millions)*	Percentage
Revenues	2,976.5	78.1
Net indebtedness increase	577.4	15.2
Fresh capital from partners	98.1	2.6
Other financial income	114.5	3.0
Other	44.2	1.1
Total	3,810.6	100.0

Source: Azpiazu and Schorr (2004).
* 1 US$ = € 0.8171

Table 7 presents a synthesis of the last few years in the case of RWE-Thames Water, the WSS utility serving the Thames River basin in England. In this case, 100 percent of the funding sources come from revenues and, increasingly, debt, with no contribution of the company's own capital.[33]

Table 7. Source of funding – RWE-Thames Water (April 1999-March 2003) (in € and %)

Source		€ (millions)*	Percentage
Revenues from water supply	(A)	3,414	40.7
Revenues from sewerage	(B)	4,665	55.7
Sub-total revenues (A+B)		8,079	96.4
Net indebtedness increase (C)		300	3.6
Total (A+B+C)		8,379	100.0

Source: Azpiazu and Schorr (2004).
* £ 1 = € 1.462

[33] For a detailed analysis of the financial performance of the privatized industry in England, see Schofield and Shaoul (1997); Shaoul (1998).

Finally, Table 8 shows the funding structure of the mixed WSS utility EYDAP in Athens, which is part owned by private investors (39 percent of shares). In this case, almost 20 percent of the resources proceed from state subsidies, while the remaining is obtained from revenues.

Table 8. Source of Funding – EYDAP (Athens), 1998-2001 (in € and %)

Source	€ (millions)	Percentage
Revenues from water supply	761	61.8
Revenues from sewerage	232	18.8
Sub-total revenues (A)	993	80.6
Other (including state subsidies) (B)	239	19.4
Total (A+B)	1,232	100.0

Source: Azpiazu and Schorr (2004).

As stated earlier, the importance of public sector direct subsidies is very high, including the case of private operators. Box 1 presents some examples from the study illustrating the different modalities and levels, which range from massive subsidies in the case of the Greek company EYDAP at around 20 percent of total funding, to the sale of under priced raw water by the public sector to the private operator in Niterói.

Box 1. Direct state subsidies (some examples)

Athens:
-almost 20% of total income (1998-2001) from direct subsidies

Aguascalientes:
-network expansion publicly funded
-private operator "rescued" by the public sector after 1994 financial crash (undisclosed amount)

England and Wales (for the 10 privatized companies in 1989):
-transfer of infrastructure from the state to the private operators at a significantly reduced cost (estimated at 10% of the assets' value)
-absorption of debt by the state prior to privatization (around 5 billion pounds)
-"Green Dowry" (cash injection of 1.5 billion pounds)
-tax exemption of 1 billion pounds

Cochabamba:
-absorption of debt left by the private operator of concession cancelled in 2000
-currently state funding for service operations

Niterói:
-Water sold by the public sector to the private operator below production costs

Limeira and Tucumán:

-Social tariff for poor sectors of the population subsidized by the public sector

In Aguascalientes, the state stepped in to "rescue" the private operator from financial collapse after the 1994 "Tequila" crisis with an undisclosed amount of direct subsidy. After that, a new concession contract was signed which passed the bulk of the financial burden, especially for infrastructure expansion, back to the public sector. In England and Wales, the companies privatized in 1989 were granted huge subsidies in the forms of a significant undervaluation of the assets bought by the companies (the public infrastructure was sold at around 10 percent of its estimated value), the debts accumulated by the public water utilities was cancelled by the state, and a cash injection of 1.5 billion pounds and a tax exemption of 1 billion pounds were granted to the companies. In Cochabamba, the debts left by the private operator after the cancellation of the contract in March 2000 were assumed by the state.

These examples of continued state subsidy, unfortunately not amenable to a more rigorous quantitative analysis owing to the paucity or inaccessibility of the information, tend to disprove the claim that PSP contributes to the financial relief of the public sector. The evidence suggests that contrary to the claim, WSS utilities continue to rely on public funding whether through direct subsidies or other forms.

Box 2. Indebtedness (some examples)

Niterói:

In 2001-3, about 50% of infrastructure investment, around 45 million dollars, was funded with loans from the National Development Bank (BNDES)

Prolagos:

In 2002 the company received loans for a total of 38 million dollars from different sources (including 22 million dollars from the Federal Economic Bank [Caixa]), while its annual turnover is 8 million dollars

Cochabamba:

Between 1999 and 2003 total indebtedness reached over 160% of total turnover
However, while in 1999-2000 the ratio debt/turnover was 4 to 1, this was reduced in 2002-3 by 50% (2 to 1) after state take over of the company

England and Wales (10 companies):

The total level of indebtedness of the privatized WSS is now around 19 billion pounds (2004), from 0 in 1989

Subsidies and debt are becoming increasingly a structural component of the funding schemes of the WSS, whether public, private or mixed. Box 2 presents some examples of indebtedness. As a trend, the level of debt of some companies, notoriously private operators, can be several times higher than their total revenue, like in the cases of Prolagos (almost five times in 2002), Aguas del Tunari in Cochabamba (during its short-lived concession this operator had a 4 to 1 ratio of debt over turnover) or Aguas Argentinas after the 2002 devaluation, as already discussed.

From another angle, one of the most important arguments in favour of PSP has been the need for investment in infrastructure renewal and expansion, which according to PSP promoters could only be provided by the private sector. However, as illustrated by Table 9 the evidence shows that there is a consistent pattern of non compliance by private operators with contractual commitments related to investment in infrastructure, which is also reinforced by the systematic renegotiation of contracts to change (in general to reduce) the original investment commitments on behalf of private operators. This is compounded by the fact that the bulk of investments have been concentrated in water supply projects, to the continued neglect of wastewater collection, treatment and

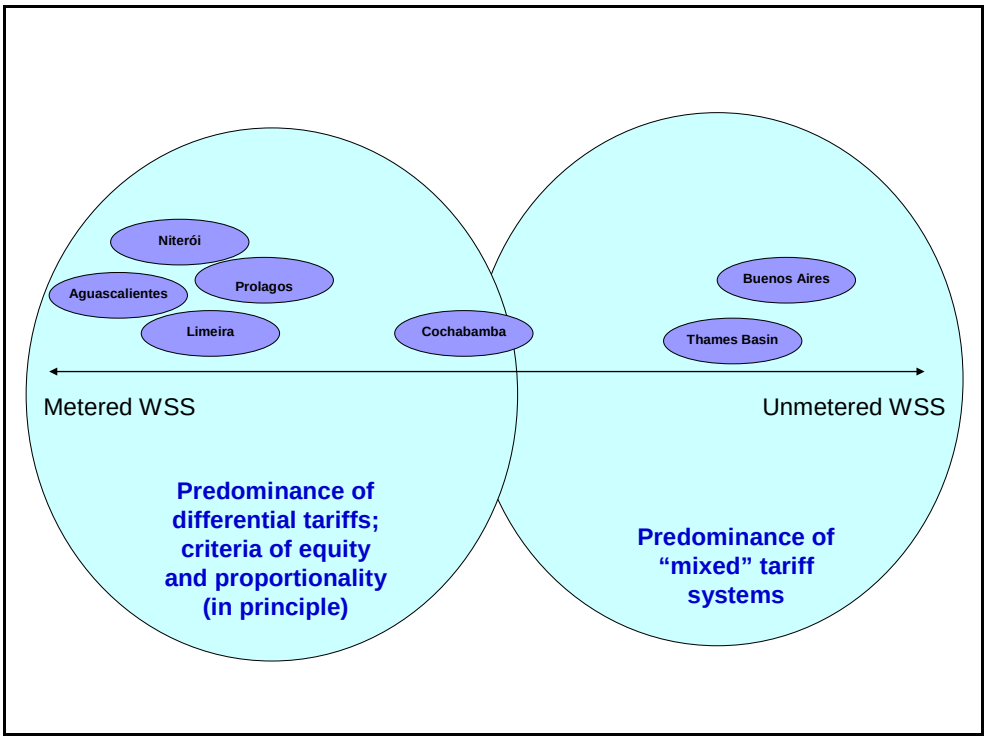
disposal. Table A1 in the Appendix A2 presents a synthesis of these findings and we will come back to this with concrete examples when considering the techno-infrastructural dimension.

Table 9. Investment commitments and degree of compliance (examples)

Investments committed by contract	Actual investments
Aguas Argentinas (Buenos Aires) Investment of 3.935 million dollars over 30 years (1993-)	**Between 1993 and 1999** 1047 million dollars According to the regulator ETOSS the degree of non compliance was 42% during the period 1993-1998 and 33% for the period 1999-2002
Aguas del Aconquija (Tucumán) (1995-7) Universalization of water supply by 2003 and sewerage by 2008	Almost zero compliance until cancellation of the concession
EYDAP (Athens) 1200 million euros for the period 2000-08	Trend of non-compliance since 2000 (the state is in charge of providing 60% of the investment)
Aguas de Tunari (Cochabamba) (1999-2000) 214 million dollars projected	No investments were made before the collapse of the concession in 2000
Aguas de Limeira 98 million dollars (35% in the first 5 years)	Lack of compliance (in 2002 the investment was 3 million dollars); The expansion targets set in the contract had already been achieved before the concession was granted

Regarding tariffs structures and the criteria used for setting tariffs, these seem to be largely determined by the level of metering. Figure 5 charts some examples according to the level of metering and the type of tariff system.

Figure 5. Tariff structures in a sample of cases



The evidence suggests that in most cases there is a progressive rate structure, which accounts for issues of social equity and affordability (Appendix A2, Table A2). However, the actual degree of progressiveness is very different across the different cases and tends to be counterbalanced by other factors, such as the evolution of rates and their actual incidence on income distribution. Thus, although in most cases low-income consumers tend to be protected by the progressive rates, in practice rate increases tend to be more detrimental to consumers with the lowest income, with the resulting regressive implications in distributive terms. In this connection, when comparing the indexing mechanisms of the tariff rates[34] with some indicator like the evolution of consumer prices or other inflation measurements, in all cases the introduction of PSP has been expressed in steep tariff increases well above inflation (Azpiazu and Schorr, 2004: 20-5). In the case of England and Wales, for instance, after growing public dissatisfaction with the combination of steep tariff increases, high

[34] The indexing mechanisms identified in the cases include ordinary and extraordinary revisions of the rates, adjustments to compensate for cost increases, indexation according to the evolution of the domestic inflation rate (or, as in the case of AASA in Buenos Aires, according to US inflation), or periodic revisions to transfer part of the productive or microeconomic gains –more appropriately, of the monopoly profits– to users and consumers (as in the case of England and Wales, where rate regulation is price cap type).

dividends paid to shareholders, millionaire salary packages for water industry executives and ostensible failure to comply with investment commitments, the economic regulator sanctioned a reduction of tariffs by an average 12 percent for the period 1999-2004. However, the most significant case is AASA in Buenos Aires, where between 1993 and 2002 the tariff increased by 88 percent against a 7 percent raise in consumer prices during the same period, and owing to very different political and economic conditions the regulator has not been able to enforce similar compensatory measures as it happened in England and Wales. We come back to these issues later on.

3. 1. 2. Infrastructural and environmental performance

Another aspect considered relates to infrastructure efficiency and environmental performance of the water utilities. Regarding the first, we examined diverse parameters related to the performance of the water utilities in the abstraction, conveyance and treatment of raw water, the distribution of drinking water, user management technologies, and the collection, treatment and disposal of wastewater. These indicators were used to compare the different water utilities in order to identify any trends that may clearly relate efficiency in the techno-infrastructural dimension with the type of operator, public or private, and thus contributing to the evaluation of the claims made in the mainstream literature.

Despite the claims made in the specialized literature promoting PSP as the best option to enhance efficiency in the WSS infrastructure, the evidence suggests that private utilities tend to perform as poorly as public entities in most stages of the process, such as in controlling physical water losses. In this regard, the evidence shows that even when the water operators have been able to improve the commercial efficiency and increase revenue, investment in infrastructure renewal continues to lag well behind. In general, water utilities tend to budget operation and expansion costs while the existing infrastructure is mainly considered from the perspective of maintenance, even in cases where the operators are obliged by contract to renew pipelines and there is strict regulation in place. However, the evidence from our case study material shows that strict regulation and monitoring of compliance with contractual commitments has been the exception rather than the rule, and consequently the lack of investment in infrastructure renewal continues to underscore the loss of large volumes of water in most cities.

Thus, although one of the reasons often given for introducing PSP is the need for huge investments in renewing obsolete infrastructures built but ill maintained by the public sector, in fact private companies have systematically failed to comply with contractual commitments in this area and tend to concentrate their investments in improving the commercial aspects of the business. In this regard, private companies have substantially improved in certain cases the user management technologies and infrastructure, in particular commercial aspects such as billing and fee collection, and also expanding coverage to include new customers. In the cases of Brazil (Limeira, Niterói and the Lakes Region), Buenos Aires, and Aguascalientes, for instance, the private companies have made substantial progress in improving user databases. In the last two cases, sophisticated computer systems have been developed that automatically

register high precision micrometers, which greatly facilitates the updating of the users register as well as keeping a meticulous control over consumption and billing of water services. The private operations in the Kenyan cases of Nyeri and Tala have also reported significant improvements in overall user management, from registration to metering and billing, although they have started from a very low level and the situation remains extremely weak in comparison with the other developing country cases in Latin America.

Nevertheless, the increasing sophistication in user management systems is counterbalanced in some cases by the low proportion of metered connections (e.g. around 20 percent in the Thames River basin and 15 percent in Buenos Aires) and by technical, social, and political problems arising from the implementation of these technologies. Moreover, there has been a clear imbalance between the efforts made to improve the commercial efficiency of the companies and enhancing the overall efficiency of the system including consumer satisfaction. Despite frequent references by the private companies to high levels of consumer satisfaction, there have been increasing conflicts deriving from the widespread dissatisfaction caused by the rising efficiency in billing and fee collection –accompanied by steep increases in water fees– which are often not matched with higher service quality. For instance, in Buenos Aires the regulator ETOSS and the Ombudsman have had to intervene very frequently owing to rising users protests, and have detected important problems in the implementation of the new user management technologies. These include errors in registration and billing, meters which overestimate consumption, unjustified payment orders, and similar problems, which have led to the repeated application of fines and other sanctions by the authorities and have even reached the Supreme Court of Justice. In Aguascalientes, problems have arisen because the poor condition of the distribution network causes that the pipes carry a mixture of water and air, which means that air is counted by the meters and is charged for in the water bills. This has affected in particular the most deprived sectors of the population, who live in areas of the city where the condition of the network is very poor and the water pressure is very low, and for whom the water bill represents a very high proportion of their household income. Thus, a survey carried recently by the municipality found that despite of the high level of coverage (98 percent), and that there is an overall good evaluation of the service (7.4 points out of 10), one third of the users complained that their drinking water supply was intermittent and unreliable while invoicing and fee collection were carried out by the private operator with disregard for these basic quality problems.

Also, private companies tend to have more deficient indicators for sanitation services (sewers and drainage), which continues to be neglected showing very low coverage levels, and poor infrastructure efficiency in the conveyance, treatment, and safe disposal of wastewater. These conditions are aggravated by the lack of investment and innovation in alternatives less costly than conventional treatment plants, which would be more suitable for expanding services to the poor but that seem to be less attractive for private operators.

However, given the characteristics of the available information and other factors the evaluation of this dimension has to be interpreted with caution, because it shows a static picture of a long-term process. As already discussed, even the companies classified as “mature” in Table 5 are really youngsters in relation to the lifecycle of the

infrastructures and socio-environmental processes that they are currently managing. For instance, the fact that today a company is "private" only reflects its current status in terms of ownership or management regime, but it does not tell us if the processes underlying the efficiency scores assigned in Table 10 below were the result of public or private efforts or failures. Only in the case of the Finnish municipalities Lahti and Kangasala the scores can be clearly related to the type of operator, given that they have been running the services for several decades as public entities. In other cases, the successes and failures now represented in the high or low efficiency scores are the result of a complex interweaving of factors whereby it is difficult to disentangle public from private responsibilities. However, taking into account the original arguments put forward to promote PSP in the sector, in particular the claim that it would enhance efficiency in infrastructure, the table offers a useful synchronic synthesis of the state of the systems that complements our overall evaluation of PSP. With these warnings in mind, let us now consider the scores for average efficiency resulting from the analysis of this dimension.[35]

Table 10. Level of overall efficiency according to type of operator

Case Study	Type of administration	Average efficiency
Lahti	Public	2.67
Thames River basin	Private	2.50[36]
Athens	Mixed	2.50
Limeira	Private	2.33
Kangasala	Public	2.33
Aguascalientes	Private	2.17
Buenos Aires	Private	2.00
Tucumán	Public*	1.80
Niterói	Private	1.80
Nyeri	Private	1.75
Tala	Private	1.33
Dar es Salaam	Private	1.20
Cochabamba	Public**	1.00

* Failed private concession (1995-1997) taken over by the provincial government.
** Failed private concession (1999-2000), taken over by the municipal government.

[35] See Torregrosa *et. al*. (2004).

[36] This high score for RWE-Thames Water is controversial, but we have used here the available official information about the operator's performance provided by the economic regulator OFWAT. From additional information gathered from the case study, including recent reports from the regulators, it seems that the actual efficiency level of the company is much lower, in particular because it has a consistent worsening performance in terms of leakage control and sewer renewal since 1998-99.

The table suggests that the most efficient systems among our case studies are those serving Lahti, with an autonomous municipal operator, the Thames River basin with a private operator (but see footnote), and Athens, a public operator that recently floated 39 percent of its shares in the financial market to incorporate PSP. The hierarchy of cases below shows that both private and public operators tend to have regular or poor infrastructure efficiency. That many public sector utilities in the developing world, especially in very poor countries, tend to have very low efficiency levels is a well established fact.[37] However, what this table shows is that one of the key arguments used to promote PSP in the water and sanitation sector since the 1980s, that it would help to enhance the efficiency of infrastructure, cannot be substantiated with evidence. When we consider the infrastructure efficiency for all the stages involved in the cycle of producing water for human consumption, from raw water intake to safe disposal of wastewater, the top performing operators tend to be public entities, which is reinforced by the fact that several indicators that allow some of the private companies to score high efficiency levels in Table 10 were actually achieved under public sector ownership and management, as in the cases of the Thames River basin[38] and Limeira.[39]

In fact, the evidence suggests that private operators have not managed to reach and maintain top performance levels even after 15 years of operation, as observed in the case of RWE-Thames Water. In Buenos Aires, after 11 years of operation and despite important achievements performance levels have been well behind the targets agreed in the concession contract and, even after several contract renegotiations that reduced the original investment commitments of the private company, the revised targets have not been accomplished either. In other cases like Nyeri, deficient structural conditions in place when private administration began operating have not been reverted after six years. Tucumán and Cochabamba are perhaps among the best examples of the very negative impact that PSP might have in developing countries, as not only the private operators did not bring in fresh investment to renew and expand infrastructure, but are trying to make the respective countries pay a compensation for lost profits and expenses

[37] However, the also well established fact that many public operators in both developing and developed countries have top levels of infrastructure efficiency has been largely ignored or neglected in the literature promoting PSP in the water and sanitation sector. And yet, in Brazil and Mexico –to take countries covered by PRINWASS–, after around 10 years of PSP experience in the WSS sector, the best performing utilities are public: SABESP (the state water utility of Sao Paulo) and DMAE (the municipal water company of Porto Alegre, in Rio Grande do Sul), among others in Brazil, and the state water company of Nuevo León SADM in the case of Mexico.

[38] For instance, as already discussed, full coverage for drinking water and sewerage connections in England and Wales, and particularly in the Thames River basin, was achieved several decades ago under public sector management.

[39] In Limeira, after a review of irregularities in the concession contract started in 1995 it was found that the original targets set for the private operator (expanding coverage up to 95 and 80 percent of the population for drinking water and sewerage respectively) had already been widely surpassed under public management: by 1994 coverage levels were already 97 percent for drinking water and 95 percent for sewerage. A similar situation happened in Niterói with the targets set to the private operator in relation to sewerage coverage (Vargas, 2003: 32).

derived from the collapse of the concessions,[40] which if granted by the relevant international tribunal (ICSID) would further aggravate the already difficult situation facing these two countries as a result of their recurrent financial and political crises.

Nevertheless, the reader should not jump to any precipitated conclusions on the basis of the analysis presented in this section. In particular, it is clear that comparing small municipal water utilities from a country with such high technological standards and wealth as those characterizing Finnish cities with the water utilities serving very large world metropolises like London, Buenos Aires and Athens, or with the small companies serving towns in Sub-Saharan Africa requires caution and detachment in the analysis. Moreover, additional factors that cannot be adequately considered here, such as the geographical characteristics of the cases or the structural problems affecting the regions where they are located may be more important than the type of administration of water systems in explaining the observed levels of infrastructure efficiency. Lastly, all case studies reported difficulties for obtaining reliable information on basic aspects such as withdrawal, distribution, and consumption of water, investment in infrastructure and technology, and other crucial issues. In many cases, essential information such as the contractual commitments regarding investment in infrastructure are not available for consultation, and in some cases not even the regulators have access to this documentation, having to rely on digested information released by the private operators. This is a serious problem affecting the possibility of any rigorous assessment of policy in the sector, and has significant consequences for the effective governance of WSS, as discussed later.

The problems of infrastructure considered above are closely related to the environmental performance of the utilities. Here, in addition to the already mentioned problems of paucity of data, and lack of access to basic information, an additional factor seems to help explaining the information gap: lack of environmental information is partly a consequence of lack of serious environmental management initiatives across the cases.[41] Another important caveat is that urban areas in different natural settings and with different socio-economic trajectories may face very different environmental challenges. For example, for a WSS system in a dry region depending on limited groundwater supplies like Aguascalientes, leakage control and improvements in the distribution system are very important. In comparison, for a WSS system located in a well-resourced river basin like Buenos Aires leakage control may be less important while tackling surface water pollution and enhancing wastewater management are urgent priorities.

[40] In the case of Cochabamba, the private operator was actually a "ghost" company based in the Cayman Islands with a capital of US$ 2,000, when it was granted in concession a municipal company with assets worth US$ 100 million. In both cases, after the collapse of the concessions, the private operators are suing the respective governments in concept of "lost profits" and other items for US$ 300 million and US$ 30 million, respectively for Tucumán and Cochabamba.

[41] And collection and analysis of primary data for a more in-depth analysis of utilities' environmental initiatives was not possible given the limited resources available. Nevertheless, the study offered an assessment framework that can provide a platform for future inter-comparative research, perhaps a Life Cycle Assessment (or other indicators- benchmarking system) tailored to the local contexts.

For these and other reasons it might well be argued that an assessment of environmental performance and impacts alone is misleading, even meaningless. Environmental improvements with an excessive social or economic cost are not necessarily desirable. For instance, in some cases it could be unfair to assess negatively the performance of a WSS operator because environmental standards are not met in their area, if enhancing performance is made unfeasible because a large number of users may not be able to afford the cost of environmental improvements and there is no provision for state funding or other alternative resources. Similarly, should an improvement in an environmental aspect (e.g. reduction of aggregate water consumption volumes and consequently reduced abstraction from water sources) be judged positively if it has been achieved to the detriment of social sustainability (e.g. if rising prices lead to increased levels of disconnection or decreased consumption from poorer households)?

On another count, "efficiency" focussing on discounted monetary costs is not a more adequate indicator either. This type of measurement masks non-monetarisable environmental and social costs, especially those externalised by the operator and those passed to the future. The best approach would be one in which disaggregated indicators covering a range of dimensions form part of an overall evaluation matrix providing the empirical ground upon which a politicised debate can then take place (Martinez-Alier, *et. al.*, 1998), which is the approach towards which this project aims to make a contribution.

Taking into account these considerations, let us say that in the analysis of this dimension we took into account indicators such as reduction of unaccounted-for water (UFW), demand management and conservation strategies, wastewater management, and environmental planning and policy.[42] The evidence gathered in this part of the study tends to be consistent with the findings of the techno-infrastructural and economic-financial dimensions: the introduction of PSP can be linked with improvements in the commercial aspects of WSS, such as a reduction of UFW, the extension of metering, and a shift from fixed to volumetric tariffs (often accompanied by an increase of prices). In this regard, this analysis confirms that the reduction of UFW associated with PSP is primarily due to improvements in metering (curbing illegal or unmetered uses and replacing faulty meters), but not with the reduction of physical losses. Also, the introduction of PSP has not enhanced the capacity for controlling water demand nor has it led to considerable innovation with respect to water saving technologies or water demand management activities. There is no evidence that the introduction of PSP has led to the implementation of conservation tariffs. The lack of committed demand controlling measures (other than metering) is evident. In none of the cities are there specific water demand management measures implemented (e.g. retrofits/rebates, conservation tariffs, efficient landscaping, water audits, use of secondary sources, etc.), or even considered.

Although there has been an important increase of investments in sewerage collection and treatment in all cases considered, only in one of the seven cases

[42] The cases considered are: Aguascalientes, Athens, Buenos Aires, Dar es Salaam, Aguas de Limeira, Aguas de Niterói, and Nyeri, Kenya.

examined there was PSP in financing and construction. In the others, it was the result of governmental action and public (or external donor) subsidisation. Sludge management, energy efficiency, nature conservation and other non-core environmental services remain outside the scope of the examined WSS utilities, even after the introduction of PSP. From another angle, there is no evidence that PSP introduces noticeable improvements in environmental planning, in making environmental information available to the public (transparency), or in developing activities to raise environmental awareness among the users and the public in general. Planning is still based on demand forecasts and supply works, and there is no evidence of integrated resource planning processes (i.e. considering demand and supply alternatives on an equal footing).

3. 1. 3. Socio-economic and demo-geographic trends

The problems highlighted above regarding infrastructural and environmental aspects are intimately related with the situation observed in relation to the socio-economic and demo-geographic aspects affecting the provision of WSS. These aspects of the study were aimed at the identification of common problems and challenges affecting the cities included in the research by looking both at inter-city and intra-city heterogeneities. While inter-city differentiation is often associated with scale, intra-urban cleavages are often the result of acute social polarization, which in the case of WSS is expressed in differential patterns of access to the services, in particular problems of coverage, affordability, and service quality. In this perspective, demographic and socio-economic processes are not just contexts of WSS policies but also structural components that underscore much of the challenges and opportunities facing the provision of these services.

Among other crucial findings it is worth highlighting some characteristics and patterns that are shared by all developing country cases, like the increasing environmental degradation affecting peri-urban areas where the poor are concentrated. Access to drinking water and sanitation services is very difficult in these areas, which is compounded by the weak integration of these territories in the activities of urban planning and management. As a result, it is possible to identify an increasing social and spatial polarization of the population in relation to the basic living standards associated with modern urban life, and particularly the differential access to drinking water and sanitation and other essential goods and services. These trends represent a crucial constraint for the implementation of the WSS programmes based on the promotion of PSP. Increasing socio-economic inequalities, poverty, deprivation, and spatial segregation hinder the possibility of success of for-profit private sector providers, who do not find particularly attractive supplying WSS to the poorest sectors of the population. These sectors usually cannot afford paying for WSS services at the rates needed to make the system profitable for multinational private corporations, which in addition are very reluctant to invest in the expansion and maintenance of the networks in poor areas owing to the high financial risk involved. These findings are consistent with the conclusions of other studies, and the problems identified are increasingly

recognized by the main promoters of PSP expansion in the water sector and also by the multinational water utilities that have been at the forefront of these policies.[43]

In this regard, the configuration of human settlements and their patterns of development and geographical distribution are major factors affecting the management of water resources and WSS. They underpin some of the most important challenges facing the policies aimed at achieving universal access to drinking water and sanitation services as expressed in Millennium Development Goals, and constitute significant factors determining the chances of success and failure of PSP in the sector (UNDP-World Bank, 1999). For instance, varying patterns of urban concentration are expressed in differential needs in relation to the extension, repair and maintenance of the WSS networks, as reflected for instance in the observed association between high population density and ageing networks. At the same time, the association between population density and water demand (Ghisham and Fleming, 1989: 35-42), which sometimes may be boosted by higher needs derived from the maintenance of public spaces (Douglas, 1983), tends to be increasingly mediated by technological advances (such as water recycling and rainwater harvesting for non drinking water uses). However, the heterogeneous relationships that can be observed between demographic density and impact on water resources and WSS is not limited to variations between cities with different population size but is also an intra-urban whereby the ethnic, age, gender, and class cleavages underpin the spatial distribution of social groups in the urban space.

As observed earlier, the cases considered in the research have very different characteristics, ranging from global cities like London to small towns in Finland and Africa, and with highly diverse material conditions (see Table 4). However, there are some common patterns worth highlighting. For instance, despite the striking differences separating large metropolises like London, Buenos Aires, and Athens they share some common traits like the dispersal of middle-aged population towards residential suburban areas, the segregated concentration of poor migrants above the national average in the cases of Athens and London –especially in the inner city neighbourhoods–, and processes of polarization of the urban space with degradation of a substantial share of the housing stock (London) and the widespread deterioration of the WSS infrastructure (Buenos Aires, London). In the medium-sized cities, like Tucumán, Aguascalientes, or the Brazilian cases of Niterói, Limeira and the Lakes Region, there is a common trend of metropolization which increases the demand for urban services and employment. On the other hand, the urban space is reconfigured with the expanding population, disorganized urban growth, and the segregation of poor rural migrants who settle in unserviced areas, often unfit for human occupation. These spaces are weakly integrated in the processes of urban planning and management, and have a pattern of poor or null provision of basic utilities and a degraded environment. In general, the expanding population in these poor areas has no access to safe WSS, but their low capacity to pay for commercialized WSS renders these settlements unattractive for private sector operators.

[43] See reports D21 (Castro, 2004) and D20 (Azpiazu and Schorr, 2004). The World Bank has recently recognized that "private providers fail to reach the very poor" (World Bank, 2003: 8), and global private water companies have started to recognize this fact as well.

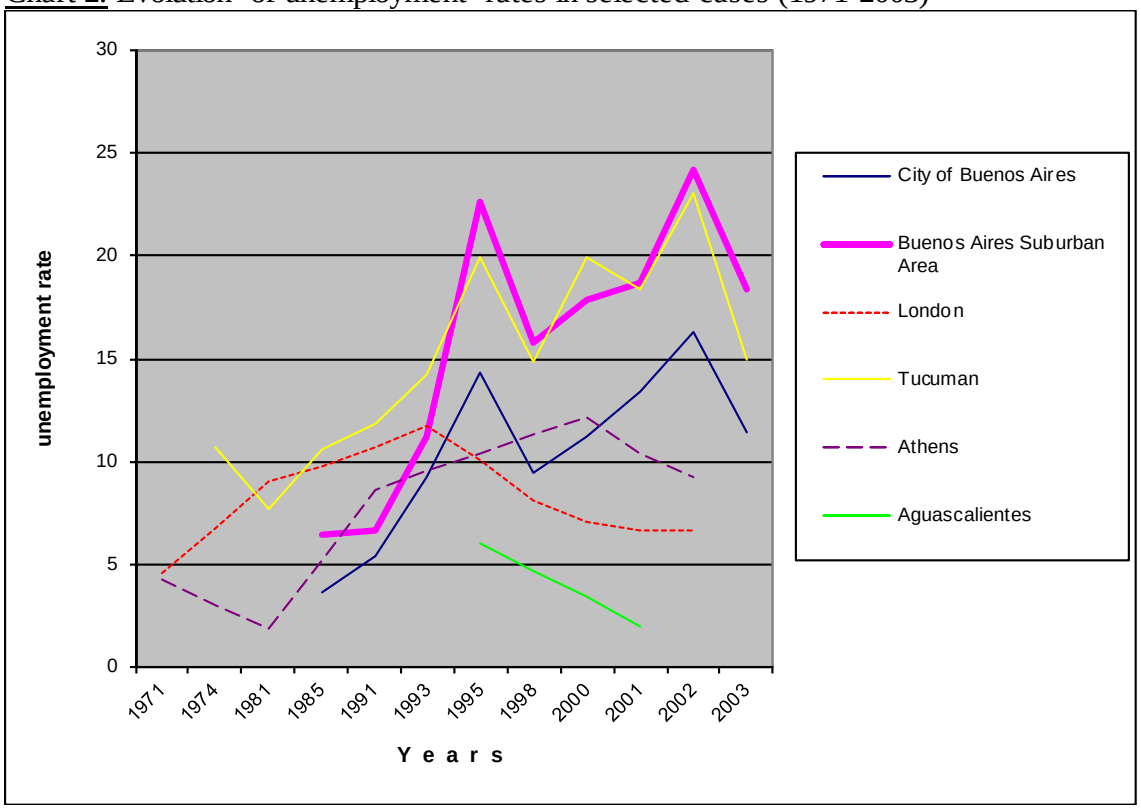
From another angle, in all cases it was possible to observe clear trends of increasing social inequality, which are expressed in the form of highly polarized urban spaces especially with regard to basic infrastructure and essential services. These findings are consistent with the available evidence suggesting that since the late 1980s there has been a significant increase in the patterns of social inequality and defenselessness affecting particularly the most vulnerable sectors of the population in developing countries.[44] In turn, these patterns of worsening inequality constitute one of the most formidable obstacles for the achievement of the Millennium Development Goals, while also representing a major potential source of social conflict. Moreover, the convergence of these negative forces presents a serious challenge for the programmes promoting private sector involvement in the WSS examined by this project. Let us briefly consider here the patterns of unemployment, regressive income distribution, and poverty.

3. 1. 3. 1. Unemployment, income distribution, and poverty patterns

Chart 2 represents the unemployment growth that took place during the 1990s in selected cities, with rates that in most cases were above 10 percent of the economically active population and more than double that figure in the case of the Buenos Aires suburban area (see Box 3 for more detailed examples). Aguascalientes provides a contrast due to its low unemployment, although in recent years the indicators have been worsening in this city too. However, these overall trends hide the fact that unemployment has no homogenous spatial and social distribution in the territories under consideration, with some areas of the cities recording higher unemployment rates, particularly those where the most vulnerable sectors tend to be concentrated.

[44] See, for instance, IDB (1998); Perry et. al (2003); McGranahan et. al (2001) .

Chart 2. Evolution of unemployment rates in selected cases (1971-2003)



Box 3. Unemployment patterns

In London and Buenos Aires there have been significant changes that represent an inversion of historical trends: these cities had historically lower unemployment rates than their countries' average, but since the 1990s the situation has been reversed suggesting worsening employment conditions.

In Tucuman, while in the 1970s and 1980s the unemployment rate fluctuated between 10.6 and 8 percent, from the early 1990s there was a rapid increase of unemployment. In 1995 the rate reached a peak 20 percent, remaining stable for a few years until May 2002 when the figures reached 23 percent.

Aguascalientes has experienced a decline in the rate of GDP, especially in the manufacturing sector, and a steady reduction of public and private investment in job creation since 1999. This has been compounded by inflationary pressures above the national average.

In the case of Athens, there has been a twin process of relative deindustrialisation of the city and growth of the unemployment rate. These changes have taken place in the context of a wider European trend of economic restructuring, and are related to the efforts made by Greece to enter the European Monetary Union (EMU), which required stricter control of public sector employment. Athens had historically low unemployment rates, fewer than 5 percent during the 1970s and 1980s, but these have increased to 8.6 percent in 1991 and 12.2 percent in the year 2000, above the national and European average rates for that year of 11.1 percent and 8.4 percent respectively.

However, unemployment rates are also unevenly distributed across social and geographical sectors. As a general pattern, poverty, deprivation, and unemployment tend to affect the most vulnerable sectors broadly composed of ethnic minorities, the youth, women (in some cases), unskilled workers, and those without property. When these characteristics of vulnerability are combined, people are more likely to be unemployed. For instance, in 1996 20 percent of the unemployed in London lived in the 10 most deprived districts, and 25 percent were under 25 years old. Those who were older, particularly men, had suffered from long-term unemployment (the metropolis has one of the highest proportions of people demanding unemployment benefits in the country). Also, according to the 1991 census non-white Londoners were 2 to 3 times more likely to become unemployed than their white counterparts. In 1997-1998, while the proportion of minority ethnic groups in the economically active population was 27 percent in Inner London and 19 percent in Outer London, their unemployment rates were 47 percent y 32 percent respectively. Recent research suggests shows that despite a sustained economic growth, the situation has substantially worsened since 1997 for the most vulnerable sectors (GLA, 2002).

In 2002 the City of Buenos Aires' unemployment rate was 16.3 percent compared to 24.2 percent in the Buenos Aires Suburban Area, which has a rate above the national average. However, unemployment in the suburban area has also an unequal distribution, with the highest rates observed in municipalities with the least favourable living conditions. Thus, while in the better districts the unemployment rate was 19.7 percent, in the most deprived areas the figure was 26.8 percent. London displays a similar distribution pattern of unemployment. The overall unemployment rate for the city in 2001 was 6.7 percent, above the national average at 5.2 percent. However while Inner London had a rate of 8.9 percent, Outer London was closer to the national average with 5.4 percent. Nevertheless, Eastern Inner London has even higher unemployment, with some boroughs recording rates of 12.3 percent and 11.8 percent.

From another angle, unemployment does not tell us anything about the type and quality of the employment relationship, for instance if the available employment is relatively stable or well paid. In this regard, in a large number of the cases considered in this research there has been a significant increase of job precariousness and informality (in all cases affecting above 50 percent of the employed), mainly un-registered jobs,[45] short-term jobs, part-time contracts, and overtime work. In some cases the labour market is also characterized by important seasonal changes.[46] In general, high unemployment rates combined with structural unemployment deprive people and households of stable income, which weakens their consumption and payment capacities. Even social sectors that have some saving capacity are affected because these savings are often destined to support unemployed members of the household, which is particularly important in developing countries with little or no unemployment benefits and also in developed countries in the case of illegal workers, which compose a significant share of the population in some cases like Athens. Likewise, in the case of unstable or intermittent employment, normally low paid and without social benefits, people and households are under pressure to prioritize the ways in which they use their income, which is normally directed primarily at essential consumption in food and housing (in these cases the rent tends to have a considerable weight in total expenses), while expenses in other important areas such as health, education, and personal pensions tend to be postponed. This is connected with the problem of income distribution, which constitutes an indicator of the capacity of households to afford expenses in essential services like WSS and sustain their living standards.

In this regard, the analysis shows that most case studies record a regressive pattern of income distribution affecting in particular the households with the lowest income and living in the most precarious social conditions, which has increased existing inequalities in the consumption and payment capacity of these sectors. These worsening conditions provide elements for an explanation of the difficulties experienced by many households in the payment of essential public services such as WSS, as it has been observed in several case studies. Nevertheless, despite the mounting evidence indicating increasing income inequality and persistent poverty among important sectors of the population, as already mentioned in all cases studied the WSS tariffs have been significantly increased, often at rates several times higher than the overall rates of inflation and wages.

For instance, in Cochabamba, after the concession was granted in 1999 the private company increased water bills by an average 35 percent, which affected especially the poorest users as the minimum charge came to represent almost 22 percent of the minimum wage. As well known, the social and political impact of this policy was catastrophic, contributing to fuelling the mass protests that led to the cancellation of the concession with the private operator and the withdrawal of the entire federal cabinet in

[45] Employment not registered in the social security schemes, sometimes called “black market” employment or undeclared employment, which excludes pension benefits.

[46] This is the case in the Lakes Region, where the economy is mainly based on tourism and is subject to significant seasonal variations in employment and income.

March 2000. In Kenya, a survey carried out in Tala in 2002 found that households were using between 5 and 9 percent of their income to pay for water bills, and the same survey applied to water users in both cities studied (Tala and Nyeri) showed high dissatisfaction with the impact of tariff increases on family income. In Buenos Aires, between the start of the concession in 1993 and 2002 the private company increased water bills by 88.2 percent compared to increases of 7.3 percent in the consumer price index and 8.9 percent in the wholesale price index during the same period. These tariff increases had a stronger negative impact on the poorer sectors of the population, contributing to the worsening inequality gap: in the Greater Buenos Aires, the poorer 10 percent of the population spends in average 9 percent of total income in their WSS bill, while for the average consumer the proportion is 1.9 percent.

In Aguascalientes, after the concession was granted in 1993 the tariff was increased by 10 percent every 2 months during the first year. After the private company had to be "rescued" from default by the government in 1994, the tariff increases needed to make the operation commercially viable were deemed to be politically unfeasible, given that over two thirds of the customer base of the company is classified as low income. Also, in addition to the impact of tariff increases that has accompanied the introduction of PSP in the water and sanitation sector, the most vulnerable groups of users have been also burdened by fixed charges to get connected to the network, which are an additional factor of exclusion give the high cost of these charges. In some of the case studies is has been detected that the impossibility to afford these charges to get connected have operated as a limiting factor by discouraging people from demanding access to WSS, thus abating the level of conflict that could have been otherwise expected. We have called this phenomenon "self limiting citizenship", as people seem to forsake the notion of universal right to these essential services.

However, problems of affordability and non payment are not the exclusive preserve of developing country cities, and issues of inequality and deprivation also underscore similar situations in wealthy places like London. In this city, the WSS tariffs increased by 95 percent between 1989 and 1999, and between 1990 and 1995 the number of pre-summons notices sent by the private companies to households in arrears rose by 900 percent. In 1994, almost 2 million households (near 9 percent of the total) defaulted on their water bills, but this figure has risen to 20 percent of total households in 2004. According to government estimations, between 2-4 million households are living in "water poverty" given the weight of the WSS bill in their total household income.

Regarding poverty, access to WSS is one of the most important indicators in the strategies adopted by the international community for poverty alleviation and human development. In this regard, the evolution of poverty patterns in the cities studied reflects their association with a high unemployment rate, employment instability and precariousness, and a reduction of individual and household income. As a trend, the evidence suggests that average poverty levels and socio-economic inequality have increased in most cases since the 1990s, although there are important differences in the extent and depth of the process in the different locations. In principle, the cities can be

divided into two groups[47]: a first group composed by Dar es Salaam, Nyeri and Tala Town (Kenya), Cochabamba, Tucumán, and Resistencia characterized by a higher proportion of the population living under the poverty line. The second group includes London, Buenos Aires, Athens, Aguascalientes, Niterói, Limeira, and the Lakes region, which record a lower proportion of the population living in poverty.

When this initial classification of the cities is broken down through the analysis of the cleavages and processes of intra-urban differentiation, the existence of important pockets of poverty and deprivation even in the wealthiest urban areas is revealed. Certain areas in the Buenos Aires conurbation and in the relatively wealthy Brazilian municipalities record levels of poverty and extreme poverty similar to those observed in the poorer cities of Tucumán, Resistencia, while some parts of Cochabamba have very similar conditions to those found in the poor districts of Kenya and Tanzania included in the study. Regarding poverty patterns, there has been a clear trend of deterioration during the 1990s, including in cities like Athens which had enjoyed high levels of social cohesion and relative well being. There is also a clear pattern of increasing inequality and polarization, which can be observed in most cities even where overall poverty has been declining, like in Cochabamba. In most cases, the most deprived sectors of the population tend to concentrate in the worst serviced parts of the urban space and record the highest levels of unemployment, employment instability and precariousness, and income inequality.

At the same time, these social conditions are often worsened and magnified by the political and economic instability generated by social confrontations among the most powerful social sectors, as it has been recently the case in Argentina. These tensions have been also exacerbated by the increasing integration of these countries into the world market, and by the processes of deregulation and liberalization of the national economies now exposed to the fluctuations and crises generated by increasing competition, and largely uncontrolled global capital flows. The process of PSP expansion in the water and sanitation sector is part and parcel of these global transformations, and we are exploring here some of the impacts that these processes are having at the level of regions, cities, and neighbourhoods. The urban-spatial characteristics of the case studies are closely related to the above examined patterns of inequality and polarization, which find expression on high levels of intra urban differentiation and segregation regarding the social and material living conditions. In different degrees, and keeping in mind the paramount differences existing between rich European metropolises like London and extremely poor African municipalities considered in the study, there is a common pattern of socio-spatial segregation within the same urban context. Nevertheless, the particular spatial expressions assumed by the

[47] In order to compare different poverty levels across the case studies we used the proportion of the population living under the poverty line as the initial criterion to group the cities. In some cases we have used the World Bank definition of poverty line (population with a daily income of US$ 2 or less). Complementarily, we have taken into account other indicators for which information is available, such as Unmet Basic Needs (NBI for its Spanish acronym), and the Human Development Index (HDI) elaborated by the United Nations Development Programme, to control the initial classification. In the case of London exclusively he have adopted the index of "deprivation" used in the British literature, which is elaborated on the basis of information about health, housing, income and employment.

processes of socio-economic inequality and polarization are worth considering owing to the specific challenges they pose for the development and maintenance of WSS networks.

From another angle, access to WSS is one of the key components of the MDGs oriented at poverty eradication and human development. Inequity in the distribution of these services is an effective indicator of the degree of social segregation and poverty. In the case of water supplies, inequity can be expressed in terms of the differential volumes of water consumed per-capita, in the quality of the service supplied, and in the weight of the cost of these services in the total household income. In this regard, the consumption of the poorest sectors tends to be much lower than that of the richest population, following a pattern where the higher the income, the higher the per-capita consumption of water. However, the impact of the tariff on household income is many times higher for the poorest sectors than for the well-off, and as a trend they receive poor quality water.[48]

Although these are well established facts, it is important to emphasise the chronic character of the problem and the fact that these trends which have existed for decades, often under public sector monopoly of WSS, are not being reversed and are rather exacerbated by the particular model of PSP expansion that has been implemented worldwide since the 1980s. Private operators need to focus their investments in ways that they can secure a return on capital for their shareholders, which is their main priority, and therefore expanding the networks to the poor has clearly not been part of their strategy, with few exceptions that tend to confirm the rule. They would, admittedly, only expand the services to the poor if this is agreed in the original contract, but too often they have not lived up to the letter of the original contracts, particularly in this precise aspect related to infrastructure expansion to cover the most deprived population. Even if the contract stipulates that this should be done, in the absence of proper regulation and public control non compliance by private providers has been the pattern, in most cases studied.

For instance, in Buenos Aires and Cochabamba the expansion of the networks and the investment in assets renewal, maintenance, and improvement of service quality has been focused mainly on the areas offering the greatest profitability. The problems faced by the companies, whether private or public, have been mainly in the areas with low payment capacity.[49] In both cases, the explanations for the problem of non payment have been the lack of a "payment culture" among the population, which often justifies the punitive action of disconnecting or otherwise limiting the water supply to these

[48] For example, studies carried out in the Mexico City Metropolitan Area during the 1980s and 1990s showed that in the poorest neighbourhoods per capita consumption may be as low as 3-4 litres per day during certain periods of the year such as the peaks of the rainy and dry seasons, while in middle class neighbourhoods the rates reach over 1000 litres per capita per day during the same periods. In addition, the water sold to the poor is often uncontrolled and of dubious quality, while the prices they pay are several times higher that in the richer areas of the city. This is a common pattern in many developing country cities.

[49] The municipal water company SEMAPA attained a coverage level of slightly over 50 percent by prioritizing a "pro-rich" connection policy and tariff system. The poor population is therefore obliged to buy water from informal sellers or alternative organization systems of water supply.

sectors, as a sort of moralising device aimed at fostering the internalisation of what is assumed to be an absent culture. Unfortunately, penalizing non payment with disconnection and similar tactics to induce a customer discipline among users such as reduced or intermittent flows or simultaneous disconnection of other essential services (e.g. electricity) has brought about significant social and political problems, not least because of the public health implications of such measures, in particular for the poorest sectors of the population.

Summing up, the comparative analysis of the demo-geographic and socio-economic structures and processes identified in the cities covered by the study provides substantive evidence for the assessment of the challenges and opportunities facing the introduction of PSP in the water and sanitation sector. In particular, it casts light on the conditions and constraints facing the expansion of WSS to the poorest sectors of the population, and contributes to make a more objective evaluation of the actual feasibility of achieving the MDGs through the expansion of the types of private sector participation promoted by mainstream WSS policies since the 1980s.

The cases studied in this research involved highly heterogeneous urban centres, which we initially classified according to population size into three distinctive groupings: large metropolises, medium-sized cities, and small urban centres. However, our main research interests led us to explore the inter-city and intra-city heterogeneities in terms of their demographic and socio-economic characteristics. This was done through the analysis of basic socio-demographic variables such as sex and age distribution, population density, and living conditions, as well as socio-economic characteristics such as the diversity of economic structures characterizing the cities, their different employment patterns, unemployment, poverty, income distribution, and water-related health problems.

Despite the important differences between London, Buenos Aires, and Athens, they share some common traits like a certain degree of demographic stabilisation, with a significant number of one-person households, an important presence of economically active population and elderly people, and a process of suburbanization of well-off sectors of the population in search for better living conditions. In the case of the medium-sized cities there is a pattern of increasing metropolization fuelled by strong migratory movements and by the integration of peri-urban areas. In contrast with the metropolitan areas, these cities tend to house a younger population and a larger proportion of multi-family households.

From another angle, we also explored the intra-urban cleavages resulting from processes of social segregation and polarization, which in different degrees were found in all our case studies. The evidence shows how these different cities are influenced by the mainstream trends of the world economy, with an expanding services sector, a simultaneous decline of primary and secondary activities, and a radical re-structuration of the labour force. During the 1990s, contemporaneously with the rapid expansion of PSP in the water and sanitation sector, these trends have been expressed in high unemployment rates, a growth of unstable and informal employment with low wages and no social benefits, and worsening patterns of income distribution. The resulting social polarization and spatial segregation are expressed in differential patterns of access to WSS regarding coverage, service quality, and affordability, which represent crucial constraints for the implementation of the WSS programmes based on the

promotion of PSP. The worsening conditions of socio-economic inequality, poverty, deprivation, and uncontrolled urban expansion hinder the possibility of success of PSP, as the large multinational companies that have been at the forefront of the mainstream WSS policies are not interested in serving the poorest sectors of the population.

In this connection, the limits of PSP as a vehicle for expanding WSS to the poor are increasingly recognized not just by donors and some IFIs like the World Bank, but also by the private providers themselves. One of the solutions offered has been a modification of the original models of PSP such as concession contracts by new schemes broadly termed "public-private partnerships" or "tripartite partnerships".[50] However, the actual implementation of these models, even when they have achieved some degree of success, do not have the strength needed to face such a challenge as the one posed by the MDGs. The main weakness of these models, in addition to their chronic financial shortcomings, is that citizen participation continues to be largely neglected despite being paid lip service in the official programmes and even included in the text of the contracts. Unless a qualitative change takes place in the forms of citizen involvement in the decision making process and in the control and monitoring of WSS, the MDGs cannot be achieved. We consider this and other related aspects in the socio-political and cultural dimension of the study.

3. 1. 4. Socio-political and cultural factors

Although the promotion of PSP in the water sector has been often presented as providing technical tools which are politically neutral, the political character of the policies mainstreamed since the 1980s is made apparent, for instance, by the mounting evidence of the direct action taken by OECD countries through their government departments, aid agencies, lending policies, or through the programmes designed and implemented by bilateral and multilateral institutions in a combination of pressure and persuasion to foster public sector reforms and introducing PSP.

However, it would be misleading to explain the particular process of PSP expansion studied by this project by reducing it to the –undoubtedly crucial– influence exercised by the governments of the OECD countries and the IFIs, in particular the IMF, the IDB, and the World Bank. In fact, any rigorous study of this development must look at the interactions of these global actors with developing country governments and institutions as well as exploring the interdependencies between representatives of the global and local intelligentsias in fostering the implementation of these policies. The actual processes have often taken the form of a translation, when not merely transplantation, into developing countries of policies largely based on fairly simplistic assumptions about socio-economic, political and cultural processes.

[50] For example, in the Buenos Aires Suburban Area and in Niterói –among other cases–, cooperation programs were implemented between the company, the municipality, and the communities to expand the networks in poor areas. The municipality provides the materials for the extension works, the neighbors offer their labor, and the water companies project management and coordination.

The evidence gathered in our research confirms one of the project's hypotheses regarding the centrality of the political dimension for the analysis and explanation of our research problem. Underscoring the challenges facing the policies oriented at expanding PSP in the water and sanitation sector there is a clash between competing models of governance. In this regard, it is worth recalling some of the central issues involved in the notion of governance,

> The core of governance has to do with determining what ends and values should be chosen and the means by which those ends and values should be pursued, i.e. the direction of the social unit, e.g. society, community or organization. Governance includes activities such as efforts to influence the social construction of shared beliefs about reality; the creation of identities and institutions [Therborn, 1991]; the allocation and regulation of rights and obligations among interested parties; and the distribution of economic means and welfare services. Governance, in other words, is the shaping and sustaining of the arrangements of authority and power within which actors make decisions and frame policies that are binding on individual and collective actors within different territorial bounds, such as those of the state, county and municipality (Hanf and Jansen, 1998: 3).

In this connection, we examine the policies promoting PSP expansion in the water and sanitation sector since the 1980s looking at the particular set of ends, values, and principles about how WSS should be organized as well as the means that have been chosen to achieve these ends. We have paid particular attention to

- the interrelation between the far-reaching public sector reforms implemented worldwide and the process of PSP expansion in the water and sanitation sector;
- how the set of principles underscoring mainstream WSS policies have informed actual reforms in the field, with emphasis on the transformation of water resources and services from public into private goods, the promotion of unregulated (or poorly regulated) private water monopolies, and the attempt to transform the social identities of water users from right holders into customers;
- the tensions and contradictions between formal and substantive citizenship as they are manifested in the implementation of mainstream WSS policies;
- the crucial issue of value incommensurability, which is one key factor explaining the recurrent failure of PSP programmes in developing countries.

The brief historical background provided in the case study reports shows the connections between the policies promoting the expansion of private sector participation in WSS and the processes of public sector reform introduced since the early 1980s worldwide. The case study material provides good evidence to explore the particular expressions that these global trends have taken in the different countries and regions. One particular feature that is worth highlighting are the diverging trends of centralization and decentralization observed in the different countries studied. A note of

caution has to be included here, as we are describing formal processes and are not assuming that these policies have actually decentralized power in a meaningful way (for instance, by sustainably empowering provincial and local authorities and communities). In fact, the evidence suggests that this has not been the case in most of the examples studied, in particular in developing countries.

With few exceptions, local authorities have not been strengthened by the decentralization policies and more often than not they have been actually weakened because they have seen their duties and responsibilities greatly increased without a corresponding enhancement neither of their political and financial autonomy or administrative and technical capacities. As shown later, this has been reflected, among other issues, in the pattern of poor performance affecting local and provincial authorities in the regulation and monitoring of private concessions in the WSS sector. In some cases, in what seems to be a paradox, decentralization has been actually twined with a degree of centralization in crucial policy decisions, as illustrated by the case of Argentina during the 1990s where the federal executive was able to foster PSP reforms virtually unchecked owing to the absence of any counterbalancing forces. An important counter development, however, was observed in Wales, where the process of "devolution" of a limited degree of autonomy from the UK executive in London to the provincial level led to the creation of the National Assembly for Wales in July 1999. One the first decisions approved by the Assembly was the de-privatization of the Welsh water utility in 2001 and its transformation into a not-for-profit entity, which became the first clear departure from the system of full-divestiture established in England and Wales in 1989.

Nevertheless, keeping in mind the mentioned counter movements, the countries studied can be broadly clustered as following two different trends: a first group formed by England and Wales and –to a lesser extent– Greece (this may apply mainly to Athens) that experienced different degrees of centralization and even weakening of the role of local authorities since the mid 1970s. Tanzania also experienced a process of centralization and delocalisation between 1972 and 1982 –although paradoxically these policies were implemented under the label of "decentralization"–, but the country gave a U turn in 1982 and has followed a pattern closer to the second group of developing countries studied, Argentina, Bolivia, Brazil, Kenya, and Mexico, which underwent processes of decentralization of WSS from the federal to the provincial and municipal levels (see Appendix A2, Table A3). Finland is a special case from the perspective of these policies, as the country has a long-standing tradition of decentralized WSS policies, which have been in the hands of municipal bodies and cooperatives since the late nineteenth century.

Regarding the first group, in England and Wales there has been a consistent trend towards further centralization of WSS since World War II, which neared completion in the far-reaching reforms introduced in 1973-74 when over 1000 municipal and small scale WSS were amalgamated in ten basin-wide Regional Water Authorities (RWAs). The role of local authorities in overseeing these services was further curtailed by new reforms implemented in 1983, and by the time when the ten RWAs were privatised in 1989, the WSS systems had undergone an unprecedented process of delocalisation, regionalization and centralization in the country. It should be noticed here that although the devolution of limited legislative autonomy to Wales in

1999 is an important counter development, especially because it led to the de-privatization of the Welsh water utility in 2001, it has not been part of a wider process of decentralization of public decision making. In Greece, the WSS utility of Athens that had been in private hands since 1928 until the mid 1970s was placed in the federal domain in 1980 under the form of a "corporatized utility" directly dependent from the government, though in the rest of the country WSS remained in municipal hands.

Apart from these two cases, the rest has followed a general trend of decentralization of WSS that can be traced back at least to 1980 with the break up in Argentina of the National Water and Sanitation Works (OSN) carried out by the military dictatorship that ruled the country at that time (1976-1983). Decentralization policies were also introduced in Tanzania (1982), Mexico (1983), Bolivia (1985-89), Kenya (1986), and Brazil (1988), although there has been a high variance among these countries' experiences regarding the actual pace and scope of implementation as well as in the concrete forms adopted by the policies in the field. Thus, Argentina has been the only case where decentralization was effectively followed by a large-scale programme of PSP expansion implemented since 1989 in the whole country, with small though significant exceptions. Between 1991, when the first privatization of WSS took place in the province of Corrientes, and 1999 the proportion of the country's population that had its WSS provided by private companies rose from 0 to 70 percent. However, even in this case there were some important counter forces at work, as illustrated by the province of Chaco where a public consultation held in 1994 to reform the provincial constitution with the aim of promoting PSP resulted in the massive opposition of the electorate to the policy. As a result, PSP became banned by the provincial constitution, a decision that cost the province dearly as it was excluded from the National Programme for Potable Water and Sewerage (PRONAPAC) funded by the Inter American Development Bank (IDB): access to PRONAPAC's funding was conditional on opening the WSS sector to private sector participation.

In all other cases the transition from decentralization to PSP expansion in WSS has been much slower and restricted in scope. Perhaps the best example is Brazil, where the process of decentralization prompted by the 1988 constitutional reform was not translated into an expansion of private sector participation in the WSS, despite the "enabling environment" created by legal and administrative reforms introduced since the early 1990s with the backing of –and through the conditionalities imposed by– the IFIs. Thus, after over one decade of pro-PSP reforms in the water sector only 5 percent of the urban population of Brazil was served by private operators in 2004. From a total of around 5700 municipalities only 33 have granted their WSS in concession to private operators, while only 2 of the 33 state capitals and none of the state WSS utilities have adopted the model of PSP promoted by the mainstream policies.

The Brazilian experience regarding the interrelation between decentralization and PSP expansion merits further examination given that the 1988 constitutional reform elicited an increasing autonomy of municipal power vis a vis the traditionally powerful provincial governments, which is of the highest relevance to understand the processes at work in the WSS sector. In this connection, decentralization has produced contradictory results. On the hand, as shown later, in the cases chosen for this research –all of them municipalities– the introduction of PSP was made possible thanks to increased municipal autonomy that gave mayors stronger decision powers in a context of rapid

institutional change in WSS. The 1995 Concessions Law, which was part of a full package of pro-PSP reforms mostly funded by the IDB and the World Bank, was timely approved in congress at a time when most municipal WSS concessions granted in the 1970s to the state water utilities were coming to an end. This was perceived as a very fertile ground for PSP, especially because there is a widespread inconformity with the state concessionaries among the municipalities.

On the other hand, however, a large number of municipalities in Brazil have been engaged in a long-term struggle for the democratisation of WSS since the 1970s, and they perceived the policies of PSP expansion as a new threat that had to be confronted. These municipalities, organized through the National Association of Municipal Water and Sanitation Services (ASSEMAE),[51] continue to challenge the authoritarian model of the state water utilities but have also become strong opponents of the pro-PSP initiatives introduced in the country since 1990. Their active political role, fostered by the decentralization process, and in alliance with NGOs, unions, important sectors of the Catholic Church, and community organizations, among other actors, is one of the key factors explaining the slow and very limited progress of PSP expansion in Brazil.

Nevertheless, to achieve a better understanding of the process we tried to go beyond the institutional and formal confrontations around decentralization and PSP expansion to examine the underlying principles and assumptions that underscore these reforms, which we discuss next.

3. 1. 4. 1. The principles underscoring pro-PSP water policies[52]

The reforms implemented since the 1980s in the WSS sector were largely predicated on the set of principles[53] associated with the "neoliberal" model that has inspired mainstream water policy worldwide during the last two decades. Although there is a need to differentiate between several strands of economic rationalism that range from extreme neoliberal calls for unregulated free-market water policies to the moderate introduction of economic principles for enhancing the management and administration of water resources and WSS, mainstream water policies implemented since the 1980s have been mostly framed in neoliberal terms.

[51] A large number of municipalities (today over 50 percent of the country's total) engaged in a struggle for the democratisation of the WSS sector since the 1970s, when most systems were given in concession to the state water utilities under strong pressures from the military dictatorship that ruled the country at the time. These municipalities created the National Association of Municipal Water and Sanitation Services (ASSEMAE - http://www.assemae.org.br/), which has become a major actor in the field.

[52] This section is mainly based on Castro (2004b).

[53] It is important to keep in mind that we are here discussing formal policy principles and we do not assume that there is a perfect correspondence between these principles and the actual processes taking place in the ground. This is valid both for the discussion on neoliberal water policy principles as well as for the principles of administrative and economic rationalism (e.g. we do not assume that the state is intrinsically a defender of the "public interest" as understood in the administrative rationalist framework).

Box 4. Key principles of neoliberal water policy

a) Water resources should be allocated through the market; that is, private water rights should be created replacing any existing forms of collective or public rights and they should be freely tradable;

b) Water services have to be considered an economic good, in the sense of being a private good that has to be bought in the market; by definition, once WSS are considered to be private goods, non payers can be excluded from accessing them; the notion that WSS are a public or social good must be abandoned;

c) Water services should be provided by private operators, which are inherently more efficient than public ones; if possible, water services should be self regulated by market mechanisms and state intervention should be minimized if not altogether cancelled;

d) Water services are not a natural monopoly, as claimed by the defenders of state intervention; most operations can actually be opened to competition, perhaps with the exception of some core activities; however, high transaction costs can make competition difficult; in these cases, a privately-owned water monopoly is preferable to a public one; even then, keep regulation to a minimum or cancel it altogether if possible;

e) Water users should be transformed into consumers, and right holders into customers.

Source: Castro (2006), chapter 6.

However, the implementation of these policies has not taken place in the historical vacuum, a fact that the actors promoting these reforms have slowly come to find out. In particular, from the perspective of this section, in most countries formal WSS continue to be organized along the principles of what has been termed "administrative rationalism", a public sector tradition that has been responsible for effectively developing the water sector worldwide and –at least in developed countries– for the universalization of WSS since the mid twentieth century. The resilience of the administrative rationalist tradition, together with other factors considered in forthcoming sections, is likely to be an important explanatory element for the slow progress of PSP in the water sector.

Let us go back to mainstream water policy as implemented since the 1980s. Although the core set of principles characterizing these policies can be distilled from the theoretical and political literature, they are not equally shared by all actors promoting pro-PSP policies, at least not to the full extent of their meaning and practical implications, and even within the institutions that have been at the forefront of PSP expansion like the World Bank it is possible to find significant disagreements among their water sector experts regarding water policy. A good example was provided by

Joseph Stiglitz, former Chief Economist at the World Bank, in his evaluation of the role played by the IFIs in developing countries:

> In setting the rules of the game, commercial and financial interests and mind-sets have seemingly prevailed within the international economic institutions. A particular view of the role of government and markets has come to prevail –a view which is not universally accepted within the developed countries, but which is being forced upon the developing countries and the economies in transition (Stiglitz, 2002: 224-5).

This is a significant statement because it emphasises that despite the intricacies and internal contradictions characterizing the system of global financial governance, it is possible to discern the regularities and trajectories characterizing the changing balance between the socio-economic and political forces at work. This lends support to our argument that although the principles have not been mechanically translated into practice, they constitute the fundamental elements that structure much of the actual policies implemented in the water sector worldwide since the 1980s, and our case studies provide substantial evidence to this effect. This, though, does not mean that these principles have been effectively or coherently applied. In fact, the actual deployment of these policies has often exposed the fallacious and mutually contradictory character of some of the principles such as, for instance, the claim that PSP would enhance competitiveness. The evidence from our study, which is consistent with the findings emerging from other research efforts, shows that there is no competition between providers, that competition for the market is severely restricted to a small number of large multinational companies, and that the vertical integration of the utilities (as a trend, not subject to regulation) encourages monopolistic behavior.[54] Nevertheless, our main focus here is on the confrontation between alternative principles informing water policy, among which the transformation of water from public or social into private good has paramount importance.

In most cases studied, the implementation of the principle that water should be treated as a private good has been limited to the provision of WSS, with the exception of Cochabamba, where water resources were also included in the concession. In general, implementing this principle required important changes to the legal framework and even to the national constitution in some cases (see Appendix A2, Table A3), changes that were heavily influenced by conditionalities imposed on developing countries as a requirement for the reception of aid or loans. As a general trend, in all cases studied the legal framework for granting concessions of WSS to private companies included the right of disconnection for non payment, which is the logical consequence of transforming the status of WSS from public to private good (i.e. in economic theory private goods are those that non-payers can be excluded from

[54] For a more specific account on competitiveness see the Cross-comparative report on the economic financial dimension (D20, Azpiazu and Schorr, 2004) and the individual case study reports (see Reference List).

consuming).[55] It is worth keeping in mind the differentiation between the introduction of economic rationalist principles like proper pricing of public services to ensure their economic and financial sustainability, and the transformation of WSS into for-profit private activities, most commonly referred to as "commodification".[56] Although these processes can be closely knitted in practice to the point that their differentiation might be difficult, there is an important distance both in principle and also in relation to the consequences. While always difficult to justify, rising prices for WSS when users perceive that there is a fair and more or less transparent system at work –for example, if they are part of the decision making process, are somehow represented in it, or at least are protected from extreme abuse in some way– is far more feasible and sustainable than doing it when the general perception is that narrow private interests are benefiting from what is broadly considered to be an essential public service.

This is not just a matter of perception or preference, and the cases studied provide significant evidence about the problems arising from the commodification of WSS through the expansion of private sector participation. In particular, the introduction of PSP has been followed by steep price increases and a systematic trend to favour short-term shareholder interest over users' satisfaction and contractual investment commitments. In most developing country cases observed, user dissatisfaction was recurrent and non payment of water bills is often one of the chosen tactics to express it. In cases like England and Wales, where user disobedience has not been as openly explicit as in the Latin American examples, it should not be discarded that current levels of non payment (affecting 20 percent of the households) be the partial result of a silent revolt against the commodification of WSS. Although the controversy around the causes for non payment continues, the evidence strongly suggests that there is a poor association between expanding PSP and enhancing the willingness to pay on the part of WSS users.[57] In fact, there is substantial evidence of the impact of rising water tariffs on the poorer sectors of the population in England and

[55] It is important to note that disconnection policies are also applied by public operators. In those cases, however, disconnection seems to be practiced with a higher degree of political legitimacy perhaps because users are receiving a public service, not purchasing a privately owned commodity (e.g. EMASESA, the municipal WSS utility of Seville in Spain, routinely practices disconnection apparently with a high degree of legitimacy [EMASESA, 2000]). In some other cases that have been brought to our attention, disconnection is practiced by public operators that differentiate between likely free-riders mostly from high and middle income sectors and vulnerable users such as low-income families (e.g. the case of DMAE, the municipal WSS utility of Porto Alegre, Brazil).

[56] In relation to water, and environmental goods and services generally, commodification can be defined as the process by which relations between human beings and the natural environment become increasingly transformed into market transactions and the elements of nature converted into tradable commodities for private profit.

[57] In fact, there is substantial evidence of the impact of rising water tariffs on the poorer sectors of the population in England and Wales since privatization (Herbert and Kempson, 1995; Ward, 1997: chapter1; Bakker, 2001; Drakeford, 2002). On the most recent wave of non payment problems, see Fitch and Howard, 2002; United Kingdom Parliament, 2003; also, the National Consumer Council's web page on affordability problems in the privatised UK WSS sector: http://www.ncc.org.uk/fuelandwater/index.htm#water [consulted in August 2004; no longer available]. See also OFWAT (2004), pp. 14-19.

Wales since privatization (Herbert and Kempson, 1995; Ward, 1997: chapter1; Bakker, 2001; Drakeford, 2002). Nevertheless, affordability problems are certainly part of the explanation of the unwillingness to pay showed by users in the developing countries involved in the study where a large share of the population lives in extreme poverty, such as Bolivia or Kenya, but also in the poorest neighbourhoods and slums of the urban areas of Argentina, Brazil, and Mexico. In this connection, as showed by the analysis of the economic impact of PSP-related tariff increases, the poorer sectors of the population are the worst affected[58] which is consistent with the findings of ongoing research[59] on the topic and refutes claims that the expansion of PSP in water and sanitation is helping the disadvantaged.

This discussion brings us closer to the consideration of another principle of mainstream WSS policy: the claim that self-regulating private monopolies are the best instruments to extend WSS to the poor in developing countries, which we briefly discussed earlier. Although admittedly this is an extreme position, the principle that WSS services should be provided by unregulated private monopolies is one of the tenets that we have identified in the specialized literature promoting PSP in the water sector. These authors have gone well beyond the argument that the private sector is inherently superior to the public to claim that private water monopolies would achieve the most beneficial results for the poor in developing countries if left unregulated.[60] In our interviews with water experts in different countries, including private sector representatives, the fact that this argument in favour of unregulated private water monopolies has been put forward by top officers of the IFIs promoting PSP worldwide caused all sort of reactions ranging from disbelief to dismissal. And yet, the evidence from the case studies shows precisely that the concession contracts have mostly been launched in the absence of any regulatory framework and institutions or in conditions where the capacity of regulatory bodies to exercise control and enforce regulation has been weak or non existent. This suggests that the principle that WSS should be provided by unregulated private monopolies has –in one way or another– influenced actual policies in the field, a hypothesis which may be worth exploring further in future research efforts.

Summing up, the main trends observed in relation to the regulatory frameworks in the cases studied show that:

- the PSP concessions have often been created before a proper regulatory framework (or even legislation) was set in place; in some cases, the creation of the regulator was just a formal procedure to comply with the requirements of the IFIs related to financial support for public sector

[58] See Azpiazu and Schorr (2004). Also see the case study reports, in particular documents Azpiazu et. al. (2003), Nyangeri (2003), and Torregrosa et. al. (2003).

[59] See, for instance, the special issue of Geoforum on "Pro-poor' water: past present and future scenarios" (Laurie, 2007).

[60] Brook Cowen and Cowen (1998); See also Newbery (1999: 385-6) for an argument in favour of the superiority of self-regulation by market forces over regulation in the case of networked utilities.

reforms but the actual commitment by governments with setting efficient and autonomous regulatory bodies has been very low, with few exceptions;

- in most developing country cases studied the regulatory frameworks set in place are structurally weak owing to lack of financial resources or poor administrative or technical capacity; in most cases, regulation in practice has been ineffective, especially regarding the crucial issue of ensuring compliance with contract commitments by private operators;
- also, in most cases the degree of autonomy of the regulator vis a vis political authorities and private operators is very low; even in cases like England and Wales, where there is a strong regulatory system in place, political interference has been a strategically important driver of crucial regulatory decisions affecting such issues as setting tariff levels or banning disconnection for non payment;
- the development of regulatory structures that accompanies the expansion of PSP has gone counter one of the main arguments put forward to promote PSP in the first place: that PSP would allow the reduction of public sector bureaucracy. The evidence shows that there is an expansion of bureaucratic structures (the case of England and Wales is perhaps the best example), which is reflected in higher costs for the users (regulatory fees become an additional component of the tariff structure);
- as a pattern, improvements to the regulatory framework and enhancement of the regulator's role have taken place belatedly, some times after several years (e.g. Buenos Aires in Argentina and Limeira in Brazil), and have been the result of mounting social and political pressures to establish stricter control over private operators; even then, when regulators seek to assert their autonomy and exercise their monitoring powers, their decisions have been often overruled by the political authorities (the case of ETOSS in Argentina being a paradigmatic example).

Although in the cases studied there is formally a regulatory system of some description in place, the evidence shows that regulation is one of the weakest aspects of the WSS policies implemented after the mainstream pro-PSP model since the 1980s. For this reason, it seems sensible to reflect on the possibility that strict and truly autonomous regulation may have not been a priority for those actors promoting PSP in the water sector, a hypothesis that receives some support from the analysis of the arguments in favour of minimal regulation or self-regulation exposed by authors sympathetic with the mainstream model.

On another count, it is clear that the transformations of users into consumers and right holders into customers have been in progress much before the mainstream WSS policies examined in this project were conceived and implemented, as they are part of the more general process of commodification that increasingly transforms human relationships in all spheres of activity, including the governance, management and social distribution of water and WSS. It is also clear that one of the most negative

aspects of this long-term process of commodification has been its effect on the poorer sectors of the population, who continue to pay much higher prices for normally substandard and often unregulated WSS. However, it is well established that the commodification process has been much slower in the water sector –especially in networked WSS– than in other basic public services like energy, telecommunications, health, education, and transport where PSP has progressed at a faster pace.

In this regard, one of the explicit objectives of mainstream WSS policies has been to accelerate the transition from public service to private good, and the main efforts have been focused on transforming the identity of the service provider through the process of public sector reform and PSP expansion. Our hypothesis is that another important transition required by the model, that of right holder and user into consumer and customer has received much less attention, perhaps because it was assumed that this would be a sort of mechanical transition that would follow once the PSP-based system of provision was in place. We have gathered enough evidence to consider this hypothesis as plausible, and the overall trend suggests that pro-PSP reformers have been largely oblivious to the potential response that these policies would elicit among the population.

One particular example of this is the fact that "user participation", that is, the involvement of users in the process of transition did not rank very high in the mainstream WSS model until very late (late 1990s), when the recurrent failures of PSP experiences –often related to user dissatisfaction and opposition– demanded an urgent review of the model. However, as described earlier the evidence emerging from the cases demonstrates that users and right holders have responded with a wide array of actions including the rejection through democratic vote of the policy that would transform WSS from right to commodity (Chaco in Argentina; Porto Alegre and Recife, in Brazil), presenting administrative complaints to the authorities (Aguascalientes, Mexico), civil disobedience (non payment of water bills as a political statement; Tucumán, Argentina), massive mobilisation (Tucumán, Argentina; Cochabamba, Bolivia), and exercising direct violence against the property of WSS operators (clandestine water tapping, destruction of water meters, occupation of buildings, etc; Mexico, Kenya, Brazil, Bolivia) or their employees (e.g. kidnapping of staff; Mexico), among others. In our perspective, the very limited user involvement in the governance of water resources and WSS observed in the case studies, as well as the conflicts emerging from the resulting widespread perception of exclusion, reflect the underlying tensions between formal and substantive citizenship.

3. 1. 4. 2. Between formal and substantive citizenship

In most cases examined, pro- PSP policies have in one way or another incorporated an explicit reference to the crucial importance of citizen involvement and participation for the success of the reform process. Unfortunately, in most cases too this has been simply a rhetorical device and meaningful citizen involvement, even in their role as individual customers, has been largely neglected in the process. However, in addition to the tension between formal and substantive citizenship, namely between the formal acknowledgement of the rights and their actual exercise, there is also a confrontation

between different traditions of citizenship underlying mainstream water policy, which we examine elsewhere. For instance, in the liberal Anglo Saxon tradition citizenship is mostly restricted to the exercise of civil and political rights, while "social rights" are not considered to be a component of citizenship. In the extreme, for liberal thinkers social rights constitute an obstacle for the achievement of citizenship, which underscores their opposition to redistributive policies, state intervention or regulation of private activities. The recognition of social rights of citizenship is rather associated with, broadly speaking, socialist and communitarian traditions, which informed the social democratic ideals leading to the universalization of essential services such as health, education and WSS in the post Second World War period. An additional layer of contradiction is added when policies developed in the context of Western political cultures are transplanted and transposed to developing countries, where they are adopted and adapted at best, or imposed with complete disregard for local conditions at worst. Let us examine these contradictions in the light of the evidence provided by the case studies.

In formal terms enhancing citizenship has been an important rhetorical element in the process of public sector reform implemented in developing countries through the policies of decentralization and expansion of PSP. For instance, in Mexico sweeping reforms were introduced in 1992 in the water sector seeking to replace traditional clientelistic practices by a "new water culture" based on citizen involvement, community responsibility, and private sector delivery of services that had been previously a state responsibility. In Bolivia a Popular Participation Law was passed in 1994, seeking to promote more citizen involvement in local government affairs, and the creation of an inter-sector regulatory framework during the 1993-97 reforms allowed for citizen participation in the regulatory process. In the European Union, the European Water Framework Directive passed in the year 2000, which is being transposed into each country's national legislation, declares that "the success of this Directive relies on close cooperation and coherent action at Community, Member State and local level as well as on information, consultation and involvement of the public, including users" . It would not be difficult to extend the number of examples of this formal acknowledgement of the crucial importance of involving people in their roles of citizens and water users in order to achieve the expected results from the policies being implemented. Nevertheless, there is overwhelming evidence that in practice citizen involvement, even when people's roles are limited to that of customers, has been highly restricted in most cases, and particularly so in processes involving PSP in the water and sanitation sector. Let us consider a selection of examples.

For instance, the case of Cochabamba is the only one among our case studies where the rights over water resources were at stake, when the new water law passed in 1999 and the concession granted to a private consortium in the same year threatened to expropriate the existing water rights of the indigenous farmers of the Cochabamba Valley. In fact, indigenous water rights, based on what is locally known as "uses and customs", were neglected in the relevant policy reforms carried out in Bolivia during the 1990s such as the Basic Sanitation Plan (1992-2000). Moreover, by transferring all water rights to the private company, including those abstraction rights previously in the hands of Cochabamba's municipal operator SEMAPA, the expropriation would have also been extended to the whole community, which owns the water rights through the

municipal body. This was one of the key reasons for the mass mobilization that led to the contract cancellation in March 2000.

In Argentina, most concessions to private companies made during the 1990s were carried out by-passing the congress (through the issue of special presidential "Decrees of Necessity and Urgency") and avoiding public consultation or citizen involvement, as it happened in 1993 with the case of Aguas Argentinas in Buenos Aires. Moreover, the concessions were granted in the absence of any antimonopoly legislation, specific regulatory bodies or consumer representation. In the case of Buenos Aires, successive renegotiations of the original concession contract followed the same model favouring the private company's interests over the public. In the extreme, even the regulator ETOSS was excluded from crucial negotiations in 1997 when the body tried to exercise some degree of control given the overt lack of compliance by the private company with its contractual obligations in relation to investment commitments.

Another crucial aspect affecting citizen participation in Buenos Aires is the monopolization of the production, access, and use of vital information about the running of the water utility by the private operator, which results in both the regulators and the users' organisations being dependent on the information released by the company, which leaves little room for independent assessment and monitoring. The role of users' organizations was only defined after the concession was granted and it was limited to presenting complaints, whether legal or administrative. After a review of the role of users in the face of mounting citizen unrest in the later 1990s, user involvement has been mainly limited to their engagement as providers of labour and materials for the expansion of the network in poor neighbourhoods, a programme that has been jointly developed by the company and international and local NGOs. Although these forms of "civil society" engagement were obviously a step forward from the alienation that users suffered in the original concession, they still have little say on the crucial aspects that constitute the governance of the water system, specially regarding decisions about who governs the system, how, at what cost, and for whom.

In the case of Tucumán, the overall process leading to the concession of the public utility in 1995 was marred from the start by lack of transparency and widespread suspicion of corruption of public officers and politicians. The negotiations were carried out in the absence of public debate or even consultation, and citizens were also excluded from the activities of control and regulation foreseen in the regulatory framework and the licensing contract. However, in sharp contrast with the case of Buenos Aires, the authoritarian character of the process in the end resulted in the early collapse of the concession. The increase of 106 percent applied to the water bills shortly after the private operator took control of the service provoked widespread unrest among water users and prompted the organization of a wide-ranging front of opposition to the privatization through a "refusal to pay" campaign that included municipal authorities, provincial legislators, and workers who had been laid off by the private company.

In addition, problems with the quality of water being delivered and the extreme high temperatures of the summer of 1995-96 compounded the situation and the protest movement grew rapidly to the point that 86 percent of the users, including the business union Economic Federation of Tucuman and the provincial government joined in the civil disobedience by refusing to pay their water bills. One of the most symbolic protests was the "Bottle demonstration" carried out by the users against the private

company and the provincial authorities, which included piles of bottles placed in front of the government headquarters and a mock "legislative session" held in the central square representing scenes of the briberization —to borrow from Joseph Stiglitz (Stiglitz, 2002: 58)— that allegedly took place when the privatization law was passed. In the end, the private company took the case to the International Centre for Settlement of Investment Disputes (ICSID) and sued the Argentinean government for a compensation of US$ 300 million under the provisions of the Reciprocal Treaty of Investment Protection between Argentina and France. The company lost the case before the ICSID in the first instance, but it appealed and the negotiations continue in what has become a landmark case in international disputes involving PSP. In September 1997, the company and the provincial government terminated the contract and the services were resumed by the public sector.

In Bolivia, the institutional framework for user participation has been limited to creating formal channels for the presentation of complaints and appeals about services' deficiencies and grievances. There is also a provision by which the regulator has the power to call public audiences for consulting users on particular issues. In general, these instruments have not helped to promote meaningful citizen involvement, as showed by the fact that a public audience held in Cochabamba in December 1999 to consult the users over the tariff increases to be implemented by the private concessionaire attracted only 14 participants. The evidence shows that, although the regulator was supposed to act in defence of users' interests, the prevailing perception among the population was that the interest of the private water operator was receiving priority over those of the community. These feelings were further accentuated because the municipality was also left outside the discussion over the tariff increases, effectively curtailing the only other mechanism available to citizens for exercising control over the process. Moreover, people had been alienated from the start, as the process leading to the granting of the concession had been conducted with complete disregard for citizens' preferences and opinions, in conditions of secrecy whereby essential information such as the contractual obligations and the financial plans of the private operator were hidden from public scrutiny through a confidentiality clause included in the contract.

In the three case studies carried out in Brazil, Limeira, Niterói, and the Lakes Region, the pattern has been very similar: the processes leading to the granting of the concessions were marred by political controversy, allegations of corruption, and long litigations in the judicial system. Against this background, it is possible to perhaps understand why the Director of the World Bank's Brazilian office, Vinod Thomas, declared in late 2003 that "when there is risk that privatization might create a monopoly, it is better to leave the services in State hands. [… he referred] to the case of Russia, a country that in the last few years has had one of the worst performances in social terms, as an example of privatization processes that should have never happened" (Folha de Sao Paulo, Brazil, 21 September 2003: B3.). He may have probably been reflecting on the similar problems that were already affecting the process of PSP expansion in Brazil. Let us see some of the examples from our case studies.

In Limeira, for instance, the changes needed in the municipal law to allow the concession of the WSS to a private operator were implemented with disregard for the relevant legal procedures and by allegedly bribing opposition MPs to vote in favour of the reform in exchange for jobs and other benefits. An inquiry over the alleged

irregularities that was launched under pressure from the media and from mounting public protests was shelved and the results were not divulged. However, the provincial Public Prosecution Office intervened and unearthed additional irregularities, in particular the fact that the concession contract had been ratified on the same date that the winning bidder had been announced, without making public neither the proposals of the other competitors nor the criteria used to select the winner. The evidence gathered by the Prosecutor also fuelled further allegations of bribery, which would have taken place to buy the vote in favour of the winning bidder. In January 2000 a judge declared the concession cancelled, but the private operator appealed the decision and won the case in the Supreme Court of Justice. Citizen involvement has been almost non existent in this case, which is also characterized by a very poor regulatory framework, and the overall process was largely hidden from public scrutiny. An important outcome of the Limeira conflict, however, is that the high profile of the political and legal struggles, which were amplified by the media, had the effect of delaying or cancelling similar projects involving the introduction of PSP in water and sanitation services in other municipalities of the state of Sao Paulo.

The other cases examined present similar characteristics in important respects, being subject to fierce political and legal battles, lack of transparency in the bidding processes, and allegations of corruption. A crucial aspect shared in common by these cases is the secrecy involving the contracts, especially the lack of information about such issues as the authorized rates of return on investment or the details of the committed investment and financial plans, which renders regulatory monitoring and public scrutiny unfeasible.

More examples from England and Wales, Greece, Kenya, and Mexico can be consulted in the relevant case studies and in the comparative report. However, there have been important examples of what may happen when citizens are meaningfully involved in the decision making process or local authorities have some degree of autonomy to decide between alternative possibilities, free from the threat of loan conditionalities or the imposition of policies by the federal government. For instance, in a number of cases citizens from several Latin American regions have managed to exercise a higher degree of control over the water policies being implemented in their area than, for instance, their counterparts in the European examples examined here. In this regard, when the decision to privatize the water utilities in England Wales was taken in the late 1980s, opinion polls suggested that over three quarters of the population opposed the move, but the decision was taken nevertheless with complete disregard for citizens' preferences and without consultation. As already discussed, this pattern has been repeated in most cases studied here, whereby PSP projects have been implemented without citizen involvement or despite open citizen opposition to the policies. However, during our research we have identified a number of situations where citizens were given, whether intentionally or not, an opportunity to express their opinion and exercise a minimum degree of control over the process.

One such instance took place in the province of Chaco, in Argentina, when in 1994 the provincial government called a public consultation on the acceptability of introducing PSP in the running of public services, WSS included. The result of the consultation, which was legally binding, took the political establishment by surprise (the most important political parties supported, or at least did not challenge, the federal

government's far-reaching privatization programme of the time) as the voters massively rejected the PSP option and decided to keep public services in public hands. This decision was inscribed in the provincial constitution, which as a result forbade the introduction of PSP in its territory. Unfortunately for Chaco, the democratic decision taken by the citizens was punished by the federal government, which excluded the province from the national funding scheme for WSS infrastructure, partially funded by the Inter American Development Bank, as participation in the scheme was conditional on privatizing the water utilities.[61]

Other examples of what may happen when citizens have the opportunity to voice their opinions are provided by the participatory processes implemented in several Brazilian cities, such as Porto Alegre, in the South-eastern state of Rio Grande do Sul, and Recife, the capital of the state of Pernambuco in the Northeast of the country. The case of Porto Alegre is much better known (World Bank, 2003: 42; Viero, 2003), and therefore we will only refer here to the case of Recife. Since 1995 Pernambuco's Water and Sanitation Company (COMPESA) became a target for the PSP programme fostered by the federal government, and by 1999/2000 the preparations for launching a bid were already well advanced with the agreement of the federal, state, and municipal governments and with support from the World Bank through the Modernization Programme for Water and Sanitation Services (PMSS). In addition, a loan being negotiated with the World Bank for investment in basic infrastructure in the Recife Metropolitan Area was also tied up to the condition that the COMPESA were privatized. However, the unexpected electoral success of the Workers' Party (PT) in Recife and other important municipalities of the metropolis changed the dynamic of the process, as the PT won the election with a programme that opposed the privatization of public services. In 2002, the municipal government of the capital organized Recife's First Municipal Conference on Water and Sanitation, opening the debate about the future of public services in the city –together with other crucial topics– in a highly participatory process which led to a massive vote in favour of keeping public services, including WSS, in public hands (Rocha Ferreira, 2003). Faced with the outcome of the Conference, and with the determination of the municipal authorities to keep their campaign promises, the state governor accepted to freeze the bidding process. Nevertheless, further pressure was put on the municipal government to accept the introduction of PSP in the state utility COMPESA through the conditionalities included in the loan negotiated with the World Bank for the recuperation of degraded areas of the metropolis. It was only after very difficult negotiations carried out in Brazil and Washington, and after the intervention of the federal government of Brazil, that the bank's negotiators accepted to withdraw the conditionality of PSP from the loan contract as requested by Recife's municipal authorities.[62]

[61] Roze (2003).

[62] Interview with Eng. Antônio da Costa Miranda Neto, Secretary of Sanitation of the Municipality of Recife and International Representative of the Brazilian Association of Municipal Water and Sanitation Utilities (ASSEMAE), Recife, 12 December 2003. We have omitted the details of the negotiations for reasons of space, but the interview provided good evidence of the strength with which IFIs use loan conditionalities to foster PSP policies in developing countries. The final negotiations for this project,

These are very relevant examples of what may happen when people are given a meaningful opportunity to participate and express their preferences and this is combined with a minimum degree of autonomy for the local authorities and regional governments. Unfortunately, as already observed this has been seldom the case in the mainstream policies promoting PSP in the water sector. It can be argued that although rhetorically social participation has been recognized as a crucial factor in ensuring the success of WSS policy reforms (European Commission, 2002, 2003; GWP, 2002, 2003; UNDP, 2003), the prevailing practices continue to alienate and exclude rather than include citizens in the government and management of these services. It is important, however, to place this critique in historical perspective. It must be recognized that citizen participation has not been a characteristic of the ways in which water resources and WSS have been governed and managed in the past. As pointed out by Dryzek, in the tradition of administrative rationalism, the highly technocratic model of public service delivery that prevailed during much of the twentieth century and that has been the target of the public sector reforms since the 1980s, the organizing principle was "leave it to the experts": citizens were expected to be passive and obedient beneficiaries (Dryzek, 1997). However, it must be also recognized that in the policies mainstreamed since the 1980s substantive citizenship continues to be excluded from the options available and the alternatives offered for people's involvement are limited at best to their role of passive customers.

In this regard, from the evidence gathered it emerges that "participation" often means willingness to accept decisions already taken with little or no consultation. This is not a new problem, and in most cases it could be observed that social struggles for the democratisation of the governance processes in the water sector and other areas of activity are of long standing, as vividly illustrated by the experiences of the Latin American countries examined here. Despite a limited degree of success achieved during the 1980s through the experience of decentralization in some countries, the persistence of paternalistic, clientelistic and authoritarian political arrangements continue to hinder the possibilities for deepening the exercise of substantive citizenship and democratic governance.

3. 1. 4. 3. The incommensurability of values

In the previous sections we have already pointed out the significance of the often conflicting traditions and cultural frameworks underscoring the ongoing transformations in the water sector and the frequent social conflicts arising from these policies. Schematically, we have considered a number of conflicting trends, including those involving:

called Prometrópole, took place in Washington in November 2002, and the contract was finally signed on 23 June 2003.

- administrative and economic rationalism
- essentialist notions of "public inefficiency" and "private efficiency"
- free-market liberal and alternative (e.g. social democratic, communitarian) notions of governance and citizenship
- formal and substantive citizenship
- WSS as public/social and private good
- Western/developed country and developing country political traditions
- "old" and "new" water culture

A more in depth analysis would lead us not only to the extension of this list to embrace, for instance, the contradictions within both developed countries (e.g. between Anglo-Saxon and Continental European notions of state-civil society interactions or between the British and French business cultures seemingly leading the experiences of PSP in the global water sector) and developing countries (e.g. the cleavages within and between national and regional cultures and traditions), but also to explore the multi-dimensional and multi-scale character of these processes, from local to global. Although these tasks are beyond the scope of this work, it is important to remind ourselves of the complexity characterizing the socio-cultural frameworks and traditions at play, which has been largely neglected in the design and implementation of the mainstream policy models examined in this project.

In this connection, another frequent contradiction that can be discerned is between the constellations of values associated with water that has been observed among different social groups,[63] even in the developed country cases, and the standardizing valuing criteria which are intrinsic to the process of water commodification informing the mainstream policy model studied here. Often, these policies have taken the form of a pretentious experiment of social engineering assuming that cultures and values associated with water can be transformed by decree and through legal-institutional change. This happened for instance during the implementation of the far-reaching reforms to the water sector in Mexico, when the government announced in 1993 that "water has ceased to be a free good and from now on it is a resource which has an economic value, and society must pay for it".[64] However, things did not work out in that way, and people responded with a wide array of actions ranging from pacific bureaucratic demands and civil disobedience (e.g. non payment of water bills) to open and violent opposition to government policies through sabotaging water infrastructure (notoriously water meters), kidnapping water company employees, or destroying property.

Let us now change the focus from the specific problems arising from the attempt to transform water from public or "social" good into a commodity, to the even more

[63] See Castro (2004b) for a more detailed account.

[64] CNA, 1993: 11; see also Rogozinsky, 1993; 1998. It is also important to point out here that assuming that water was free before these reforms is a fallacy, as for most people in Mexico water has already become an expensive commodity since long ago.

problematic policies oriented at reducing the multi-dimensional values associated with water to a market equivalent. This is not merely a technical problem –as some experts seem to understand it– that could be solved by carrying out an aggregation of benefits assessment, for instance by applying a survey among the users of a water course to find out their "willingness to pay", and then use the results to estimate the market value of a river or spring,[65] or as shown later through "stakeholder dialogue" to elicit consensus about paying more for water. However useful these techniques may be for providing criteria to support difficult policy decisions such as authorizing abstraction rights in endangered aquatic environments, the problem is that the results derived are often interpreted as representing people's perceptions on a range of dimensions that are irreducible to the market sphere.[66] Moreover, the actual usefulness of these techniques is cast into doubt when factors other than market-based efficiency criteria are introduced into the analysis to account for such issues as the conflicting cultural values and material interests held by different actors regarding issues of ecological sustainability and social equity.[67] Moreover, different languages of valuation in mutual conflict often reflect far deeper confrontations about the control and distribution –the very "stuff" of governance– of water resources and WSS, a struggle often fought through the deployment of alternative and often irreconcilable value systems.

Unfortunately, the mainstream policies promoting the expansion of PSP in the water sector have been largely informed by this one-dimensional thinking where market-based efficiency criteria override other considerations, including those of economic efficiency. An example in point is the interpretation given by pro-PSP reformers to the Fourth Principle of the Dublin Declaration adopted at the UN Conference on Water and the Environment (January 1992), which stated that "water has an economic value in all its competing uses and should be recognized as an economic good" (UN, 1992). The principle itself is quite ambiguous and leaves some room for different interpretations, but the following conclusions extracted from the principle illustrate the tendency towards market reductionism in mainstream water policy:

> finally, in the Dublin statement […] the rhetoric of international meetings on water resources management recognized that water is essentially an economic good. […] This is not a very new proposal.

[65] This type of experiment, for instance, was carried out in the Thames Basin (England) to solve a dispute between the private water company and the environmental regulator over abstraction rights and environmental protection in the River Kennet, a tributary of the Thames, in which the regulator lost the case against the private company. For a discussion of the technical aspects surrounding the case, see Bateman et. al. (2000).

[66] In the case of England, as briefly summarised in Box 2, this irreducible character of the multidimensional values associated with water was unearthed by another study funded by the private water industry that demonstrated the influence of social and cultural values in the behaviour of water users, which poses often intractable challenges to commercial approaches to water management (see Strang, 2004).

[67] For instance, see the analysis on the implications of applying one-dimensional cost-benefit analysis to the evaluation of alternative policy paths involving ecological distribution conflicts (Martínez-Alier, 2002).

> Economists interested in water resources management have long argued the necessity to recognize that water is an economic good and not to treat water as having "unique importance" but as one good among all others. […] If water is an economic good then it should be possible to govern its allocation through the market (Lee and Jouravlev, 1998: 7).

There has been a not-so-subtle displacement of meaning here, because recognizing that water has an economic value that has to be taken into consideration does not mean a) that this is the only value that counts and b) that, consequently, water should (could) be governed through the market. There is a double reductionism here: first the multidimensional values associated to water are reduced to the economic dimension, and second the economic dimension is reduced to the sub-dimension of market transactions.

Aware of the dangers and actual failures derived from the inability of mainstream water policy to deal with the challenges posed by conflicting values and interests, water experts linked to the large multinational private companies in a joint effort with practitioners and academics have suggested the need for more sophisticated assessments of "the range of valuing perspectives" characterizing human relationships with water. "Societies", we are told, "need to attach more importance to water, yet in recent times they have been reluctant to do so. In part this problem is due to different people or groups of people valuing water in different ways".[68] Leaving aside the controversial sweeping statement that societies are reluctant to attach more importance to water, the assessment of the problem of valuation offered by the paper is highly problematic in several respects. Despite the skilful description of the wide-ranging valuation systems and perception frameworks that they have identified in the countries where they operate, when it comes to the actual appraisal of the problem it soon becomes clear that what is been discussed is how to find a consensual mechanism (through dialogue) to negotiate the translation of "non market" into market values. The main problem, according to the authors, is "under investment in infrastructure, inadequate operation and maintenance, and inadequate funding for protection of natural water resources" (Moss *et. al.*, 2003: 13). The sustainable solution suggested is to create a "virtuous spiral" consisting in the recognition of the "full costs and benefits" to be derived from valuing water more, which in this case means willing to pay more for it. To hammer down the message, they quote the declaration made by an Indian Minister at the World Economic Forum in Davos 2000, who said "The people are willing to pay, the problem is that we politicians are not willing to charge them" (Moss *et. al.*, 2003: 14). Another sweeping statement, in the light of the evidence showing people's resistance to the commodification of WSS and the widespread problems of non payment detected. For instance, as shown in the recent price review carried out by the economic regulator OFWAT in England and Wales for the period 2005-2010, although politicians and regulators seem to be willing to charge people more in the face of the mounting investment needs facing the water companies, users' unwillingness to pay –or

[68] Moss *et. al.*, 2003: 7, 8. See also the presentation made by one the authors of the report at the Second PRINWASS International Conference in Mexico, in April 2003 (Wolff, 2003).

as a financial analyst put it, "political reasons"– have certainly played an important role in postponing the huge tariff increases requested by the private companies.[69] These tough decisions that politicians face in wealthy countries like England are even more daunting in most developing countries, where willingness to pay can certainly not be associated with PSP expansion.

In this connection, the results of market reductionism in water policy have been often catastrophic, as already exemplified with the paradigmatic cases of Cochabamba in Bolivia, but also in Argentina, Mexico and other countries. By catastrophic we do not only mean the painful impact of failure on the countries involved, which is the most obvious consequence if we think in terms of their chances for achieving the MDGs. It has been also catastrophic, from a certain perspective, for the private operators that have ventured into the programme of PSP expansion often with very limited knowledge and understanding of the local socio-political and cultural conditions. As a recent assessment by the Executive Vice-President of Suez put it,

> I would like to have a brief look back at 2002 and 2003, whose disastrous results shook our convictions to the core: The overly hasty expansion of water internationally ended in failures that were painful for all of us; ONDEO and SITA's acquisitions of companies that should have been sources of growth instead generated losses or were a cause for concern. We were forced to pull out of unprofitable projects (Puerto Rico, Atlanta, etc.) and to sell part or all of companies such as Northumbrian and Cespa, whose development we were no longer able to finance. This sorely tried our nevertheless proven business models and our certainties (Chaussade, 2004).

This experience of business failure is shared by others, to the point that the global water operators have been rapidly retreating from developing countries. In the words of a recent analysis, "Can anyone imagine investing hard currency in water projects in countries like the Philippines, Argentina and Bolivia now?" (Global Water Intelligence, 2004). This question provides an insight into the assessment that global water companies are making about the role that they can play in helping developing countries to achieve the MDGs.[70] It also provides, mutatis mutandi, a contribution to our own evaluation of the claims made in mainstream WSS policies about the role of the private sector as a key provider of much needed investment for developing countries.

Nevertheless, and to keep our discussion on track, the particular forms of PSP expansion implemented in the water and sanitation sector of developing countries since

[69] GWI (2004b). The private companies had requested an average increase of 31 percent but the regulator took the sector by surprise by only authorizing a 13 percent increase

[70] Another example was provided by the Corporate Social Responsibility Director of RWE-Thames Water, who stated that the company no longer has plans to invest in water projects in developing countries (Aylard, 2004). See also Global Water Report (2004) about RWE-Thames exit strategy from water projects in China and other countries.

the 1980s has also elicited strong reactions among the citizenry of these countries, which range from disappointment to outright contestation. For instance, recent evidence produced by the regular survey of public opinion in Latin America suggests that the already low acceptance of PSP policies among the public of the region has been worsening in recent years. Table 11 shows the results per country and also the total average for Latin America.

Table 11. Evolution of public support for PSP in Latin America* (1998-2003)

	1998	2002	2003
Costa Rica	60	32	-
Brazil	51	38	33
Venezuela	51	38	32
Mexico	49	28	31
Chile	51	22	29
Honduras	47	34	25
Colombia	39	23	24
Paraguay	46	19	23
Peru	44	32	22
Ecuador	52	40	20
Nicaragua	46	30	20
Bolivia	49	23	19
Guatemala	62	29	16
Uruguay	29	16	16
El Salvador	54	35	15
Argentina	32	14	12
Panama	20	31	10
Latin America	46	28	22

Source: Lagos (2004).

* Percentage of positive responses to the question: "Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with each of the following phrases that I am going to read: The privatization of state companies has been beneficial to the country." The table only shows results for the responses "Strongly Agree" and "Somewhat Agree".

Although some analysts have tried to dismiss the evidence suggesting growing dissatisfaction with PSP, which –and more worryingly– is also associated with a growing disenchantment with the democratic political system,[71] the figures project a

[71] According to the Latinobarómetro survey, between 1996 and 2003 there has been a decrease in the support for democracy in 14 out of the 17 countries covered by the study. Among the countries studied in

strong pattern which is similar for most countries and is consistent with the findings of our research. This development also offers strong counterevidence to another claim made in the mainstream WSS literature that we examine in our project: that the expansion of PSP would promote democratization in developing countries.

PRINWASS, the figures were: Argentina from 71 percent in 1996 to 58 percent in 2003; Brazil from 50 percent to 35 percent; and Bolivia, from 64 percent to 50 percent. Mexico has remained stable at 53 percent (Lagos, 2004).

Conclusions

Summing up, our conclusions from this evaluation of PSP policies on the basis of the case study material cast light on the observed trends and patterns in the water and sanitation sector and on the role that PSP can play in achievement of the MDGs. As discussed earlier, the theoretical and empirical evidence does not support the claim that PSP produces higher levels of efficiency than public operators in the provision of WSS. When we observe the whole cycle of the production and distribution of WSS from intake to safe wastewater disposal, private operators tend to fairly poorly in comparison with public companies. While private operators tend to concentrate their investments in enhancing the commercial aspects of the business (e.g. metering and expanding coverage for drinking water), as a trend they neglect much needed investment in infrastructure renewal and in the overall management of wastewater. There is no evidence in our cases that private operators pay adequate attention to demand management initiatives, environmental planning, or integrated management of natural resources –that are core components of sustainability strategies–, even when these activities are stipulated by contract or otherwise subject to strict regulation.

Rather than being driven by a genuine search for efficiency improvements and expansion of services to the poor, mainstream PSP policies form part of a pendular cycle between private and public-sector expansion that has been closely intertwined with transformations in the socio-economic structures of the leading capitalist countries. While during much of the twentieth century, and especially since the post Second World War period, the state was given a central role as the key economic actor, by the early 1970s significant changes in the global economy completely transformed the relative weight of the state vis a vis other actors, in particular the transnationalized private sector. One of the most significant consequences of these water policies, largely inspired by free-market liberalism, has been the attempt to radically transform the structure of governance of WSS, which had traditionally been developed around the principles that these are a) essential services that b) have to be universally available and, therefore c) provided under strict public sector control or directly by the public sector. Under the conditions prevailing internationally since the 1980s, attempts have been made to reorganize the governance of WSS around market principles, reducing state control over private operators to a minimum and transforming the status of WSS from essential public services into commodities.

However, this has not been a linear process and has not produced a uniform model. Despite some common "megatrends" (e.g. the monopolization of the private water market by a handful of multinational operators, mainly European) we have also found differences and diversity in policies and strategies between and within countries and regions. Even within the key institutions that have promoted the model since the 1980s, like the World Bank, there exist internal tensions and debate which have produced a diversity of outcomes. While during the 1990s critics of the model (for instance within the Bank) were few and their voices very moderate, since 2002 the dissent has been more open and louder. Finally, in its World Development Report 2004 the World Bank has openly admitted that water policy, in the face of the challenges assumed by the international community in relation to the MDGS, cannot be grounded

on a market-centred structure of governance nor that the private sector can be considered to be the main actor for universalising WSS in developing countries.

With hindsight, it is clear that these changes may be related to the recurrent failures experienced by projects involving private sector participation in WSS during the 1990s, and to the increasing reluctance of private water companies to engage in the provision of WSS in developing countries owing to the financial and political risks involved. As it could have been predicted from the historical record of private sector participation in WSS, although private operators may be willing to undertake the provision of these services in conditions that guarantee a sustained return for their shareholders, countries cannot rely on private operators for the expansion and maintenance of WSS to the large population in developing countries who have limited (often poor) or no access to these services. These are normally the poorer sectors of the population, a large proportion of who live in extreme poverty, who could barely afford to pay for WSS at their true international market price (and often not even at their cost-recovery price), and whose situation has been systematically worsened throughout the 1990s owing to increasing inequality and deprivation.

Furthermore, there is a continuity of a long standing tradition in the provision of WSS (whether publicly or privately organized): despite the rhetoric of "civil society" participation that has become a key element in current water policy programmes, citizen involvement continues to be limited or non existent. This is particularly true in the case of developing countries, but it can also be detected in the developed country cases that we consider in our project. In the extreme, the absence of channels for adequate citizen involvement (or the actual denial of the right to be involved) has been responsible for bitter confrontations in many cases involving the particular forms of private sector participation in WSS promoted since the 1980s, which has led to the collapse of concessions, violence, political crisis, destruction of property and, most regrettably, the loss of human life.

As a result of the failures and highly conflictive situations created, promoters of (for-profit) PSP increasingly recognise the need to take into account the socio-cultural and political conditions when designing water and sanitation policies. This change has been reflected among other issues in new programmes to develop "partnerships" between the private sector and other actors, especially "public-private partnerships" and "tri-partite partnerships" (between the public, private, and voluntary sectors). However, the unawareness or even disregard for the socio-political and cultural contexts in the programmes promoting PSP in WSS has been a crucial factor in the large number of highly controversial experiences and failures recorded since the 1980s. In many cases, this has led to bitter conflicts and to the collapse or early abortion of programmes involving PSP (especially with foreign private operators) in the provision of WSS. In the institutional dimension, the weakness of even absence of adequate legislation and regulatory frameworks has been a recurrent problem in the cases studied, which is confirmed by research carried out by peers. In some cases countries have reformed the legislation (e.g. water laws) to facilitate the expansion of PSP in WSS in ways that showed little regard for important considerations such as ecological sustainability (e.g. water resources conservation) and socio-political accountability (e.g. mechanisms to protect citizens' rights in their role as users of WSS). In most developing country cases PSP was introduced in the absence of any regulatory structures and institutions, while

little attention has been paid to local capacity building in the public sector to strengthen institutional capabilities for regulation and control. As a rule PSP contracts for WSS have been kept away from public scrutiny, and crucial information needed for effective monitoring of compliance by private operators is not available in the public domain (it is considered the private property of the companies).

At the heart of the problem, in our perspective, there is a confrontation between alternative models of governance, structured around competing principles, which in the current historical stage have taken the form of a confrontation between a revival of market-centred governance against the pre-existing model of state-centred governance that had prevailed in the WSS sector for most of the twentieth century. In this regard, one of the crucial questions that need to be answered is what were the theoretical, historical, and empirical grounds supporting the notion that the failure of state-centred governance in the WSS of developing countries could be solved by radically transferring the role of the state to monopoly private companies. The evidence gathered in the project work leaves little doubt that there was scant historical support for these arguments, and the new evidence produced about the most recent wave of PSP in the water and sanitation sector strongly disproves the claims that the chronic WSS problems facing developing countries can be resolved by relying on the private sector. In this regard, the evidence is very consistent, whether we look at the socio-political aspects or at the economic-financial, socio-economic, demo-geographic, and even techno-infrastructural dimensions of PSP expansion in the water and sanitation sector since the 1980s as addressed by other project reports. The main trends identified in our research suggest that achieving the goals of the international community to halve the world population without access to WSS by 2015 will not be possible by relying on the private sector, which is already accepted by some global water companies. Full universal coverage worldwide by 2025, on a sustainable basis (economic-financial, ecological, and political), seems to be extremely Utopian to be discussed under the present circumstances.

Nevertheless, this has been a highly dynamic process, with frequent changes in direction and a very unclear horizon in terms of where will the system move next. On the one hand, despite the arrogant neglect of citizen preferences and opinions, especially but not only in poor developing countries, there has been mounting dissatisfaction and open defiance to the PSP policies in many countries. It would be a mistake to explain this opposition as a mere rejection of market policies or PSP, as in fact there was some degree of support among important sectors in the early 1990s, for instance in countries like Argentina. However, the convergence of, among other issues, undemocratic decision making and implementation and lack of participation, the widespread perception of public and private corruption in the negotiation of concession contracts, and the increasing evidence that the PSP model privileges the interests of the private operators rather than the needs of the communities, contributed to the observed marked decline in acceptance or at least tolerance of PSP and to the mushrooming of public protest, civil disobedience, and even violence against the model.

There are many other elements that we have considered, such as the multidimensionality of values and cultural factors affecting WSS, not just in developing countries, but will not repeat here for the sake of clarity and brevity. Let us close this report by emphasising some of the key lessons that can be learnt from this experience in

order to think ahead and contribute to the positive construction of feasible alternatives. In this regard, we have insisted in the need to give centrality to the political dimension for understanding the historical success of past WSS policies, which achieved universal coverage on the basis of principles whereby social rights and the common good were given priority over market interests. These policies and the principles that inspired them were accepted and supported by a wide range of social and political forces, even by sectors that in other respects defended free-market liberalism but accepted that WSS required different arrangements. It is our hypothesis that achieving success in the design and implementation of present and future WSS policies as those required to meet the UN Millennium Development Goals (MDGs) can only be achieved through the amalgamation of a similarly broad and universalistic set of social forces, not just composed by the illuminated elites but also able to incorporate the large sectors currently excluded or marginalized. The good news is that these processes are already taking place, however imperfect or limited they might be. Critically supporting them and contributing to their multiplication and expansion is also an intensely political endeavor.

Appendix

Appendix A1 – Operationalization of the analytical dimensions

Environmental dimension

a. **Extension (km^2) and components of the catchment area**
   i. main water sources
      - aquifers, rivers, etc.
   ii. water volumes available (normally expressed as annual average) (changes over the last 30 years approx.; projected trends)
   iii. raw water characteristics (changes over the last 30 years approx.; projected trends)

b. Precipitation (mm per year) in the catchment area (changes over the last 30 years approx.; projected trends)
   i. Average annual precipitation
   ii. Seasonal cycles (e.g. average in the dry season, rain season, etc.)

c. Temperature in the catchment area (changes over the last 30 years approx.; projected trends).
   i. Average
   ii. Seasonal variation

d. Main environmental processes at work in/on the catchment area that have or might have direct consequences on WSS
   i. Depletion of water tables through overpumping (depletion rates)
   ii. Raising water tables owing to deindustrialisation or other processes
   iii. Reduction in river flows owing to over abstraction, deforestation, etc.
   iv. Pollution of water sources (main polluters [industry, urban wastewater, etc.], estimated impact of polluters [%], etc.)
   v. Other

e. Alternative water resources being/to be developed within the catchment (expected volumes, etc.)
   i. New surface/underground waters
   ii. Reclamation of wastewater (water recycling)
   iii. Rainwater harvesting
   iv. Desalinization
   v. Other (develop accordingly)

f. Inter-basin resources
   i. Water imports / inter-basin transfers
   ii. Water sources from outside the catchment being tapped for supplying WSS in the urban area

iii. (Volumes involved (changes over the last 30 years approx.; projected trends)

g. Water abstractions (latest year for which data are available)
   i. Volumes abstracted per source (annual average);
   ii. Percentage of total abstractions per source [e.g. abstractions from the river Thames amount for 85% of total abstractions in the Thames catchment])
   iii. Recent trends (approx 30 years) and forecasts for i. and ii.

h. Water use per activity (volumes and relative %) (latest year for which data are available)
   i. Domestic consumption
   ii. Industry
   iii. Agriculture (especially irrigation)
   iv. Other (disaggregate if possible)
   v. Recent trends (approx 30 years) and forecasts for i-iv.

i. Wastewater per activity (estimated volumes of wastewater produced [distinguish between actual wastewater and stormwater] and relative %) (latest year for which data are available)
   i. Domestic
   ii. Industry
   iii. Agriculture
   iv. Other (disaggregate if possible)
   v. Recent trends (approx 30 years) and forecasts for i-iv.

j. Wastewater treatment and disposal
   i. Type of wastewater treatment applied [primary, secondary, or tertiary treatment])
   ii. Estimated volumes of wastewater treated before been released back into the environment.
   iii. Impact of wastewater disposal (e.g. use in irrigation [volumes]; where is it disposed [river, sea, lakes, etc.], etc.)
   iv. Main characteristics of wastewater
      1. Quality of wastewater before treatment (main quality parameters, seasonal variations, etc.)
      2. Current wastewater standards (discharge limits for selected parameters [e.g. BOD, COD, phosphorus, nitrogen, suspended solids, nitrates, etc.]) (these should be available from the relevant water authority)
      3. Level of compliance with the standards (also normally available from the water authority)
   v. Recent trends (approx 30 years) and forecasts for i-iii.

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Socio-economic and demo-geographic dimension

- **Demo-geographic trends**
  - i. Population
    - Population figures
      - Gender distribution
      - Age distribution
    - Growth rates (natural; migration)
    - Household information (types and percentages)
  - ii. Spatial distribution of the population in the area
    - urban
    - rural
    - concentration patterns (density)
    - impact of population on water resources (size, location)
  - iii. Development patterns
    - Urban development (growth rates, actual expansion)
    - Recent trends (approx 30 years) and forecasts
- **Socio-economic trends**
  - i. Economic activities (%)
  - ii. Employment
  - iii. Level of activity
  - iv. GDP (total and per activity) (total and per capita)
  - v. Income distribution patterns
  - vi. Poverty patterns
  - vii. Recent trends (approx 30 years) and forecasts
- **Water-related health trends**
  - viii. Impact of water-related diseases (trends)
    - Main profile of water-related diseases affecting the area
    - Morbitity rates (adult, infant)
    - Mortality rates (adult, infant)

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Techno-infrastructural dimension

- **Characteristics of the system's infrastructure**
  - i. Water intake and treatment
    - Intakes, pumping systems, reservoirs, treatment plants, etc.
    - Approximate age and condition of the infrastructure
    - Recent trends (renewal programmes, extensions)
    - Forecasted needs (renewal, upgrading, etc.)
  - ii. Water supply network
    - Extension and physical characteristics (mains, secondary networks, etc.)
    - Approximate age of the network (obsolescence; losses, etc.)
    - Recent trends (renewal programmes, extensions)
    - Forecasted needs (renewal, extension, etc.)
  - iii. Wastewater network
    - Extension and physical characteristics (mains, secondary networks, treatment plants, etc.)
    - Approximate age of the network (obsolescence; losses, etc.)
    - Recent trends (renewal programmes, extensions)
  - iv. Wastewater treatment
    - Extension and physical characteristics (lagoons, treatment plants etc.)
    - Approximate age and condition of the infrastructure
    - Recent trends (renewal programmes, extensions)
    - Forecasted needs (renewal, upgrading, etc.)
  - v. Stormwater sewerage
    - Extension and physical characteristics (lagoons, treatment plants etc.)
    - Approximate age and condition of the infrastructure
    - Recent trends (renewal programmes, extensions)
    - Forecasted needs (renewal, upgrading, etc.)
- **Technological Links and Potential for Local Development**
  - i. Source of the technology for the original systems
    - water supply and sanitation networks (mains; pumping stations, etc.)
    - treatment plants (drinking water; wastewater)
    - other (e.g. aqueducts, dams, etc.)
  - ii. Source of the technology for any updating and extensions to the original systems (as in i.)

iii. Potential for alternative technological development
   - Technologies available locally (in use or not)
     - Feasibility of use
     - Economic, financial or other constraints
   - South-South technological links (as alternative to North-South)
     - Feasibility of implementation
     - Economic, financial or other constraints

- **Technical capacity**

iv. Availability of human resources

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Legal-institutional and policy dimension

- **Legal environment**

i. Water law
   - Main characteristics of the country's water law that affect private sector participation in the provision of WSS (pay also attention to any provincial or lower level legislation that might have importance in your case study [e.g. in Argentina, provincial laws often differ from the national code and have more importance at the local level])
     - Legal status of water resources ownership (private, public, etc.)
     - Water rights (formal, informal or traditional)
       - Abstraction rights
       - Wastewater disposal rights
   - Recent trends (approx. last 30 years but also pay attention to earlier processes if relevant)
     - Changes to water law (e.g. changing the legal status of water to create water markets)
   - Forecasted or expected trends in water law
     - Ongoing or expected changes (e.g. changing the legal status of water to create water markets)

ii. Relevant water-related laws
   - Health law
     - Components of health legislation that impinge on WSS (e.g. obligation of the providers of WSS to ensure the provision of safe WSS; prohibition of disconnection of water supply in case of non payment by domestic users)
   - Public utility laws or similar laws that rule the provision of WSS

        - E.g. Public infrastructure laws; laws allocating responsibility for WSS to provincial, municipal or similar bodies, etc.
    - Laws directed at promoting Private Sector Participation in WSS
        - Objectives and criteria
        - Legal mechanisms
            - rights and duties of the private operator
            - distribution of risk costs
    - Recent trends in water-related legislation other than water law (approx. last 30 years but also pay attention to earlier processes if relevant)

- **Regulatory environment (regulatory structures [national, regional or local level, as it may correspond]), especially with relation to private sector involvement**
    i. Environmental regulation (water resources management, abstractions, wastewater discharges, etc.)
        - Institutions
            - Mandate
            - Functions
            - Degree of autarchy in relation to the regulated companies and the political system
            - Funding
            - Monitoring of the regulatory bodies
            - Users' organizations
        - Main characteristics (objectives, standards, enforcement mechanisms, etc.)
            - E.g. Demand management policies (e.g. metering, recycling, water-saving programmes, etc.; economic instruments (creation of property rights; enforcement of green taxes; polluter pay principle, etc.)
    ii. Water services quality regulation (drinking water standards, wastewater standards, environmental impact standards, service standards, infrastructure renewal standards, etc.)
        - Institutions
            - Mandate
            - Functions
            - Degree of autarchy in relation to the regulated companies and the political system
            - Funding
            - Monitoring of the regulatory bodies
            - Users' organizations

- Main characteristics (objectives, standards, enforcement mechanisms, etc.)
  - E.G. policies for the expansion of the system

iii. Ownership regulation

- Institutions
  - Mandate
  - Functions
  - Degree of autarchy in relation to the regulated companies and the political system
  - Funding
  - Monitoring of the regulatory bodies
  - Users' organizations
- Main characteristics (objectives, standards, enforcement mechanisms, etc.)
  - E.g. restrictions to horizontal integration or conglomeration, etc.

iv. Economic regulation (financial and business performance of the water utilities, tariffs, etc.)

- Institutions
  - Mandate
  - Functions
  - Degree of autarchy in relation to the regulated companies and the political system
  - Funding
  - Monitoring of the regulatory bodies
  - Users' organizations
- Main characteristics (objectives, standards, enforcement mechanisms, etc.)
  - Direct or indirect regulation of the profit rate
  - Incentives structure (cross-subsidisation, metering, etc.)
  - Cost recovery policies; pricing mechanisms; etc.
  - Investment (types) (quantitative and qualitative goals, financial and control mechanisms
  - Antimonopoly regulation

v. Recent trends and expected changes in the regulatory environment (approx. last 30 years but also pay attention to earlier processes if relevant)

- **Organizational environment (market structure)**

i. Organization of networked WSS

- Type of organization (characteristics, synthetic history, etc.)
  - Public company (state, municipal, etc.)
  - Private operator (specify the modality of operation [full ownership, time-limited concession, partial concession] or type of contract) (also if it is national, foreign, part of larger business group, etc.)
  - Co-operatives (specify the main characteristics, as under this heading there could be very different organizational forms)
  - Neighbourhood or community organizations (also specify their characteristics)
  - Other

ii. Organization of non-networked WSS (e.g. distribution of water with tankers)
- Classification as in i).

iii. Informal arrangements
- Private or community wells
- Other traditional or informal water uses and institutions

- **Policy environment**

i. Policies oriented at promoting private sector participation in WSS
- History and context of the policy
- Objectives (explicit or implicit)
- Main actors (winners, losers, etc.)
- Citizen participation
- Public debate on the policy/cies

ii. Tax policy
- As in i).

- **Water supply services (latest year for which data are available)**

i. Number of connections (domestic, industrial, commercial, etc.)

ii. Water supplied (billed water; "unaccounted for water" [water "lost" – provide the local definition for unaccounted for water])

iii. Population covered (actual figures and percentages)
- Population served by each different type of coverage such as in-house connection [networked], in the plot; by private water vendors, municipal tankers, etc.

iv. Drinking water quality
- current standards being applied

- quality differentials between different types of coverage (e.g. between networked water and water provided by water vendors or municipal tankers) (if available)

v. Recent trends (approx 30 years) and forecasts for i-ii.

- **Wastewater services (latest year for which data are available)**
  i. Number of connections (domestic, industrial, commercial, etc.)
  ii. Population covered (actual figures and percentages)
    - Population served by each different type of coverage such as in-house connection [networked sewerage], municipal collection, dry latrines, etc.
  iii. Recent trends (approx 30 years) and forecasts.

Economic-financial dimension

- **Financial mechanisms (services and infrastructure)**
  i. Self-sufficient (funding generated by revenues or other user-based systems [e.g. cost-recovery instruments])
  ii. State funding
    - Subsidies
    - Low-rate loans
    - Debt-based
    - Other
  iii. International funding
    - Loans
    - Grants (donors)
    - Private investment
    - Other
  iv. Alternative sources

- **Pricing systems (recent evolution and prospects)**
  i. Prices
    - By type of services
    - Billing systems
    - Price discrimination (monopoly)
  ii. Tariff structures
    - Service
    - Fixed costs

- Profit rates
- Other

- **Investment (recent evolution and prospects)**
  i. Business strategies
  ii. Level of investment (targeted and actual figures)
    - Type of investment
    - Service sector targeted
    - Financial mechanism
  iii. Level of reinvestment

- **Socio-economic impact (recent evolution and prospects)**
  i. Impact on direct and indirect employment (sectors linked in the productive chain)
  ii. Impact of the cost of the WSS on income distribution
    - e.g. in relation to the minimum salaries, basic basket indicators, etc.
    - by social sectors
  iii. Competitiveness
    - Evolution of prices (water and sanitation) for non-domestic users in relation to the evolution of the retail price index
    - Comparability of profit rates with international standards
  iv. Impact on the external account of the economy
    - Level of indebtedness
    - Level of capital inflows
    - Imports
    - Degree of local integration in the production of inputs and capital goods related to WSS
  v. Public finance
    - Taxes
    - Subsidies
    - Impact of intra-corporate relations on the goods and capital markets

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<u>Socio-political and cultural dimension</u>

- **Water (and Environmental) Governance**
  i. Decision making processes in the WSS sector
    - Government structures and modalities

- Water bureaucracy
  - Main actors (engineers, accountants, etc.)
  - Degree of expertise
  - Traditional roles
  - Degree of political influence [e.g. through corporate representation, etc.])
- Prevailing political culture
  - Administrative rationalism
  - Clientelism
  - Other

o Private sector profile

- Prevailing business culture in the WSS
  - Competitive
  - State-led or state protected
  - Other

o Community and "civil society" forms

- Degree of involvement of community and civil society organizations in WSS
  - In the organization and delivery of WSS
  - In the WSS policy making processes
  - In user protection (monitoring of the service, etc.)
  - Other

- **Socio-economic and cultural values attached to water**

i. Concept and traditions of water as a public good; notions of common pool resource, toll goods, and private goods

ii. Gender-related perceptions and values of water

iii. Economic values attached to water

o Attitudes towards cost-recovery policies, commodification, etc.

iv. Cultural (or religious) values attached to water

o Traditional uses of water (e.g. indigenous customs)

o Non-capitalist Western and non-western notions of water and 'nature'

- **Social and political conflicts around WSS**

i. Social and political conflicts around WSS

o Ongoing or potential conflicts around

- Access to the services
- Quality of the services
- Management of the services (including pricing)

- Political aspects of the services (e.g. disputes over the actual organization and running of the WSS; opposition to private sector participation [especially privatization])

- Conflict forms (actions)
  - Bureaucratic complaints
  - Public protest
  - Direct action (e.g. civil disobedience [e.g. non-payment of water bills], destruction of property [e.g. of water meters], personal attacks [e.g. kidnapping of water vendors or water officers])
  - Political organization (through formal or informal channels)
- Conflict resolution mechanisms

Appendix A2 - Table A1. Investment obligations and actual achievements in a selected group of cases

City/Region - Company	Investment Obligations	Achievements and failures
AASA (Buenos Aires)	The licensee originally agreed to invest 3.95 billion dollars during the 30 years of the license. The target for 2002 was to extend coverage of water supply and sewerage to 88 percent and 74 percent of the population respectively.	According to the private operator, between 1993 and 1999, investments reached US$ 678 million for network expansion; US$ 211 million for renewal, and US$ 158 million for other concepts. By 2002, nearly 3 million new users had been incorporated. According to the regulator ETOSS the level of non-compliance with the investments committed by contract reached 42 percent during 1993-98 and 33 percent between 1999-2002. The actual coverage achieved was 79 percent for water supply and 63 percent for sewerage.
Aguas del Aconquija (Tucumán)	The targets agreed by contract starting in 1995 were to achieve full coverage for water and sewerage after 8 and 13 years, respectively, from around 80 percent and 35 percent (the level of coverage existing in the early 1990s).	When the concession was cancelled in 1997 investment in expansion had been virtually null.
EYDAP (Athens)	EYDAP agreed to invest near to 1.2 billion Euros between 2000 and 2008.	Coverage in Athens was already close to universal before the introduction of PSP in 1999. The pattern has been one of non compliance with the investment targets (e.g. in 2000 investments were 20 million lower than agreed), although we were unable to access the actual figures. The private managers of the company blame the Greek government for the lack of compliance, as it is responsible for subsidising around 60 percent of the investments).
CAASA (Aguascalientes)	The original contract obligations agreed in 1993 (to which we did not have access) were significantly reduced after a contract renegotiation in 1996 resulting from the financial collapse of 1994. The bulk of investment in infrastructure and the whole sewerage sector were taken back by the public sector.	The investments made from 1993-1999 reached 110 million pesos (nearly 12 million dollars). The company reduced residential leaks and increased metering. However, essential infrastructure renewal to reduce water losses has not taken place. The level of coverage was already high before the introduction of PSP and was increased between 1990 and 2000 from 96 and 93 percent for water and sewerage respectively to 98 and 97 percent.

City/Region - Company	Investment Obligations	Achievements and failures
Aguas del Tunari (1999-2000) (Cochabamba)	The initial investment obligations totalled 214 million dollars (the investments planned included an extension of the drinking water network and the construction of a new water treatment plant, the extension of another network, the creation of crude dyke water plus the installation of pipelines from Misicuni to the valley of Cochabamba, more drinking water and irrigation, and the generation of electric energy).	There were no investments in the brief period of the concession before it was cancelled.
Aguas de Limeira	Originally, the licensee agreed to make investments totalling 98 million dollars (35 percent of these during the first five years of the license).	The original obligations were not fully met by the company when rates were not adjusted. In 2002, investments totalled 9 million Reais (around 3 million dollars); nearly 60 percent went to the sewer system, a little over 20 percent to providing drinking water, and the remaining 20 percent to other ends. Although targets for coverage were set, it was later discovered during a judicial review that the targets originally agreed had already been accomplished by the public sector before the concession.
Aguas de Niterói	The original commitment for the 30 year period of the concession was over 100 million dollars, with 60 percent of that figure being invested during the first 3 years (1998-2001). Around 25 percent of the funding would be provided by the National Development Bank of Brazil and the remainder from revenues and own capital.	During the first 2 years investments reached around 50 percent of the total, on target for the agreed 60 percent for the first 3 years. The target for expanding water supply and metering was achieved, reaching 98 percent of coverage and 82.5 percent of connections metered. Regarding sewerage, like in the case of Limeira here the original target set for the private operator had already been achieved by the public sector before the concession was granted (the target was to achieve 60 percent of coverage by 2002 but in 1991 coverage was already 66 percent). The target for reducing physical losses from 34 percent to 25 percent has not been met, as the main investments have been concentrating in expanding water supply and metering.

Table A2. Characteristics of the tariff structures (examples)

City/Region – Company	Principal characteristics of the rate structure
AASA (Buenos Aires)	From the start in 1993, a "K" factor was used to take into account the area, age and built surface of the building, plus a fixed charge for infrastructure costs. After the infrastructure charge was eliminated in 1997, other fixed charges were incorporated (SUMA = universal service and environment; CIS = charge for service incorporation; CMC = maintenance charge for connections; CIA = charge for additional income. In addition, users must also pay the VAT (21 percent) and the regulatory fee (2.7 percent of the bill).
Aguas del Aconquija (Tucumán) (1995-7)	The rate structure was similar to AASA
EYDAP (Athens)	There are four large categories: residential (with five strata of average consumption), industrial (with two segments, either less or more than 1,000 m^3/month), and the public and municipal sectors. Before the introduction of PSP in 1999 there was a high "penalty" for residential users who exceeded 27 m^3/month. These characteristics have been maintained throughout the past few years, but the gap between the different rates with respect to municipal buildings has shrunk substantially.
SEMAPA (Cochabamba)	The categories are defined for charging rates under a system of meters and the following is a description of the structure. Residential categories (R1, R2, R3, R4) are differentiated according to plot surface, number of floors, number of water points, and the state and quality of the building. Special categories are classified as commercial, special commercial, public, industrial and preferential, according to the type of water use (human consumption, raw material used to transform products) and according to the property (business, public nature, or social purposes).
Aguas de Limeira	Four categories were established: industrial (rate 147 percent higher than for residential users), commercial (129 percent higher), public (23 percent higher) and residential. In all cases, the rate level is progressive according to consumption levels.

Table A3 Sequence of policy reforms and PSP events in the case studies

YEAR	COUNTRY	KEY POLICY	PSP EVENT
1972-82	Tanzania	"Decentralization" programme actually consisting in regionalization and centralization, abolishing local government authorities	
1974	England and Wales	Water Act regionalizes WSS by collapsing thousands of small utilities into 10 basin-wide Regional Water Authorities	
1980	Greece	The Athens WSS utility that had been in private hands through concession since 1928 becomes a "corporatized utility" directly dependent of the federal government. In the rest of the country WSS are run by municipalities.	
1980	Argentina	Decentralization of WSS from federal to provincial level	
1982	Tanzania	Local Government Acts to reintroduce local government authorities (abolished in the 1970s)	
1983	Mexico	Reform to Article 115 of the Constitution introduces municipalization of WSS	
1983	England and Wales	Water Act further curtails local authority involvement in the governance and management of WSS	
1984	Tanzania	Constitutional reforms sanctioning the reintroduction lo local government authorities	
1985-1989	Bolivia	First stage of the Structural Adjustment economic reforms preparing the ground for PSP expansion	
1986	Kenya	Announcement of decentralization and commercialisation of WSS, supported by the German Agency for Technical Cooperation (GTZ)	
1988	Brazil	1988 Constitution introduces decentralization and municipalization of WSS	
1989	Argentina	Federal State Reform Law	

		promoting full-scale privatization	
1989	England and Wales	Water Act creating 10 privately owned WSS utilities to replace the Regional Water Authorities.	In the Thames basin, including the London Metropolitan Area, Thames Water plc is appointed for 25 years (there is no bidding process) to replace the Thames Water Authority
1989	Mexico	Creation of National Water Commission (CNA); launching of "New Water Culture" to cancel notion of public good and introducing market framework in WSS	
1990	Brazil	Creation of the Modernization Programme for the Sanitation Sector (PMSS) with World Bank funding, oriented at promoting PSP	
1991	Argentina	PRONAPAC Plan launched by federal government to fund water and sanitation works, with support from the Inter-American Development Bank (IDB). The plan conditioned loans to the privatization of the provincial WSS.	
1991	Bolivia	National Basic Sanitation Plan, part of the measures envisaged in the Structural Adjustment reforms, with explicit reference to privatization plans for WSS Creation of the Ministry of Urban Affairs, including a National Basic Sanitation Department (DINASBA) aimed at enhancing the institutional importance of WSS Specification of functions for Water Administrative Entities in the Basic Sanitation sector, opening the field for PSP in WSS	
1992	Mexico	Reform to Article 27 of the Constitution to allow creation of land and water markets New Water Law promoting PSP	
1993	Mexico	Aguascalientes State Water Law reformed to allow PSP in WSS	Concession contract of Aguascalientes City WSS for 20 years. The contract was revised in 1996, reducing the investment commitments of the operator and extending the period to 30 years
1993	Argentina	Law 6445 in Tucuman province	

		allows privatization of WSS	
1993	Argentina		Buenos Aires Metropolitan Area WSS are granted in concession for 30 years.
1993-1997	Bolivia	"Second generation" Structural Adjustment reforms, based on large-scale privatization and decentralization.	
1994	Argentina	Chaco province seeks to reform the provincial constitution to allow privatization. The electorate votes massively against and privatization of WSS is forbidden by the provincial constitution. As a result, Chaco is excluded from the federal PRONAPAC plan launched in 1991 with IDB support.	
1995	Argentina		Tucuman province's WSS granted in concession for 30 years. The contract was cancelled in 1997 owing to ongoing conflicts over the quality and affordability of the service. The concessionaire sued the federal government of Argentina before the ICSID for 300 million dollars, and the litigation continues.
1995	Brazil	Federal Law of Concessions promoting PSP	
1995	Brazil		Services concession in Limeira (Sao Paulo state) for 30 years
1996	Greece	Federal Law for the Modernization of Public Utility Companies promoting PSP. Athens' WSS utility becomes an autonomous public company.	
1997	Brazil	Rio de Janeiro State Complementary Law 87 allowing PSP in WSS Opening of bidding process for the privatization of the state's water utility CEDAE, condition required as part of the State Reform Programme negotiated with the IMF by the Brazilian government	Following a series of legal battles through 1997 and 1998, the state government excludes CEDAE prom the state's privatization programme in 1998.
1997	Brazil		Services concession contract in Niterói (Rio de Janeiro state) for 30 years. Although the contract was signed in 1997 in was not started until 1999 owing to the legal disputes surrounding the failed privatization of the state's

			utility CEDAE.
1997	Tanzania	Regional Administration Act sanctioning decentralization process. Legal reform to promote PSP in WSS. National Urban Water Authority (NUWA) transformed into Dar es Salaam Water Supply and Sewerage Authority (DAWASA)	
1998	Brazil		Services concession contract in Lakes Region of Rio de Janeiro state (inter-municipal body) for 25 years
1998	Kenya		Service concession contract in Nyeri Town for 20 years
1999	Kenya		Service concession contract in Tala Town for 30 years
1999	Greece		Athens' WSS utility EYDAP is opened to PSP by a process called locally as "equitisation": a minority part of the companies shares is floated in the exchange market, 39 percent initially with the prospect of further expanding PSP
1999	Bolivia		Concession granted for water resources and WSS in Cochabamba. The concession was ended few months later (2000) after a massive mobilisation of the population demanding its cancellation.
2003	Tanzania		After several failed bidding processes (1999, 2000-2001), a 10-year lease contract for WSS in Dar es Salaam was signed.

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